

# Technocratic Ministers in Office in European Countries (2000–2020): What’s New?

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## Abstract

Although Europeans are favourable towards the idea of being governed by ‘independent experts’, and despite the burgeoning literature on technocratic ministers, we still miss important information about the profiles of technocrats in government. This article provides new insights into the characteristics of non-partisan, non-elected ministers and the roles they perform once in government based on a Technocratic Ministers’ Dataset covering all governments in 31 European countries from 2000 to 2020. First, we show that average share of technocratic (as opposed to partisan) ministers in European cabinets rose from 9.5% to 14.2% over the last two decades. This increase is characteristic of all macro-regions, except Scandinavian countries. Second, technocratic ministers are assigned to a diversity of portfolios and not just finance and economy, which, respectively, account for only 15% of technocratic ministers. Finally, technocratic ministers do not hold office for shorter periods of time than partisan ones, except when they are part of caretaker cabinets.

## Keywords

technocracy, political elites, partisan governments, technocratic governments, Europe

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## Introduction

Being governed by independent experts as opposed to elected politicians is a widely supported option among Europeans (Bertsou and Pastorella, 2017). The most evident application of this expert-led model in a democratic regime is the appointment of a non-partisan technocrat as minister, one of the highest-ranking positions in government. Technocratic ministers are members of government cabinets who have never been

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elected to public office, never had formal ties to any political party and, finally, possess non-party political expertise relevant to their role in government. Such technocratic ministers are appointed to a variety of cabinets, ranging from partisan-led (e.g. 2020 Sanchez Government in Spain) to full technocratic or ‘caretaker’ (e.g. 2019–2020 Bierlein Government of Austria). In this regard, technocrats are different from political outsiders, as the formers have a specific expertise, which is in line with the portfolio to which they were assigned.

Building on the scholarly interest in technocracy, a growing number of studies have addressed the phenomenon of non-partisan ministers (Alexiadou et al., 2021; Alexiadou and Gunaydin, 2019; Costa Pinto et al., 2018; Emanuele et al., 2022; Improta, 2021; McDonnell and Valbruzzi, 2014; Valbruzzi, 2020). The appointment of ministers who are independent from political parties and experts in the portfolio they manage has been associated with a broader conception of politics, which aims at de-politicizing policy decisions and at framing them as technical as opposed to moral or value-laden decisions (see Bickerton and Invernizzi Accetti, 2017; Caramani, 2017). Some studies have investigated the prevalence, characteristics and portfolios of non-partisan ministers, demonstrating that they are more common than previously assumed, more likely to hold a PhD than partisan ministers, and most often appointed to the Ministries of Finance and/or Economy (Costa Pinto et al., 2018; McDonnell and Valbruzzi, 2014). Others have focused on the factors leading to the appointment of technocratic ministers, pointing to the increasing complexity of contemporary government (Alexiadou and Gunaydin, 2019), the role of economic and political crises (Wrátil and Pastorella, 2018) and electoral volatility (Emanuele et al., 2022). Finally, some studies have examined how technocratic appointments affect the democratic quality of government (Bertsou and Caramani, 2020; Pastorella, 2016). However, most of these studies were limited to a smaller number of countries, specific positions such as Prime Minister or Minister for Finance and/or Economy, or full-technocratic/technocratic-led governments only.

While technocratic cabinets and technocratic ministers are on the rise in Europe (Costa Pinto et al., 2018; McDonnell and Valbruzzi, 2014; Valbruzzi, 2020), and while research around this phenomenon is expanding, we still lack a comprehensive examination of *who* the technocrats actually are, what they did before entering politics, or the ministerial portfolios which they are assigned. In this article, we present a newly released dataset, the *Technocratic Ministers Dataset* (TMD) that would expand our knowledge in this direction. The TMD includes data on all government cabinets of 31 European democracies (EU 27 + Iceland, Norway, Switzerland, UK) between 2000 and 2020, making it the most comprehensive dataset on technocratic ministers in European democracies ever compiled.<sup>1</sup>

### The TMD

For each of the 31 European countries, the TMD provides detailed information about all ministers (gender, portfolio, political background before becoming minister) and the cabinets in which they served (among others, vote-share, and ideological positioning of all political parties participating in the cabinet as well as duration of government) (a code-book is provided in the supplementary materials). In addition, for those ministers with non-partisan backgrounds, meaning they never ran for elections and/or never joined a

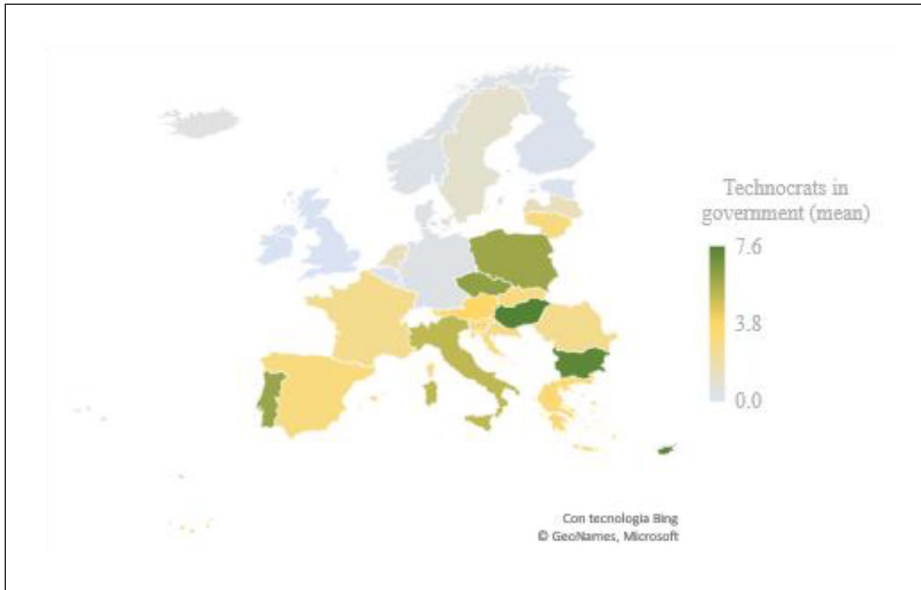
political party, we also coded their education (degree and discipline) and professional background outside politics, in order to determine whether they had relevant expertise for the portfolio they are assigned. The data were compiled by country experts and extracted either from official government websites when available or from secondary sources. In total, it represents 7035 appointments of ministers<sup>2</sup> to 297 cabinets.<sup>3</sup> Ministers are defined as members of government who are permanently invited and granted voting rights in the council of ministers. This is a broad but stringent definition. It excludes, for example, Deputy Prime Ministers in countries where they have no voting rights in the Council, or other cases, such Secretaries of State in the Netherlands and Belgium, who are invited to the Council of Ministers for specific issues related to their portfolios, but are not full council members.

To identify technocratic ministers, the TMD adopts criteria that are similar to, but more stringent than previous work by Costa Pinto et al. (2018). In the TMD, technocratic ministers are those who have not been elected to a national-, regional- or local-level office, have never run as candidates for any election (even if unsuccessful) and have not been a member of any political party before being appointed.<sup>4</sup> These three criteria allow distinguishing between partisan and non-partisan ministers. We also excluded from the technocratic label those who ran for the first time as candidates in the election immediately preceding their appointment to government. Furthermore, non-partisan ministers who were reappointed for a second term were no longer counted as non-partisan if they participated in the electoral campaign preceding their reappointment.

Building on the recent literature on technocracy, we also determined whether non-partisan ministers brought expertise directly relevant to their portfolio (Alexiadou et al., 2021; Alexiadou and Gunaydin, 2019). This last step is qualitative and based on information about the education and professional background of the technocratic ministers: we consider ministers as experts, if either their education or their working background (or both) matches with the portfolio they are assigned. For example, a finance minister would be considered an expert in the domain if they obtained a degree in economics or worked in financial institutions prior to being appointed. With the exception of a very small number of portfolios for which the identification of relevant expertise was more challenging (i.e. Minister of Family Affairs),<sup>5</sup> the vast majority of portfolios were easily linked to a relevant professional or educational expertise. Nevertheless, our coding reveals that only a handful of non-partisan and non-elected ministers do not have a specific education and working background in line with their portfolio (the full list is available in Appendix 1, Table 1A). For example, Letizia Moratti was appointed in 2001 as minister of Education in Italy after obtaining a master's degree in political science and working as business executive in the oil industry. Such cases were therefore not coded as technocratic ministers, but might come closer to what Camerlo and Pérez-Liñán (2015) call 'political outsiders'.

### *How Common Are Technocratic Ministers Across European Democracies (2000–2020)?*

Our first finding from the TMD is that while technocratic ministers remain a minority in European governments, they are also more common and increasingly prevalent than

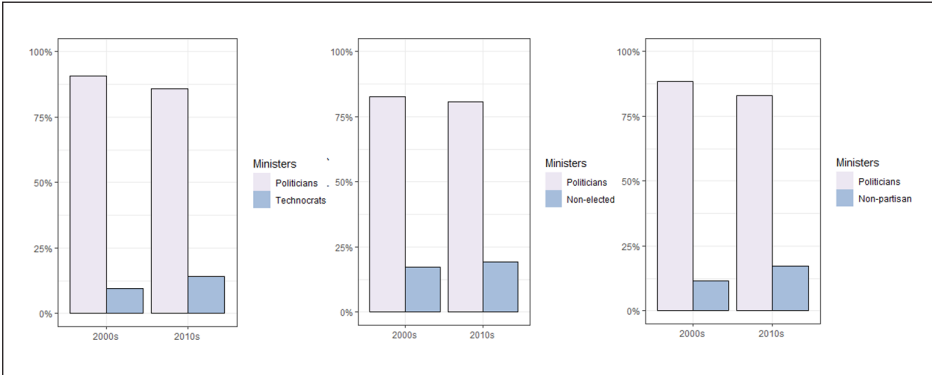


**Figure 1.** Mean Number of Technocratic Ministers Per Government in Europe, 2000–2020.  
Source: Own elaboration from TMD.

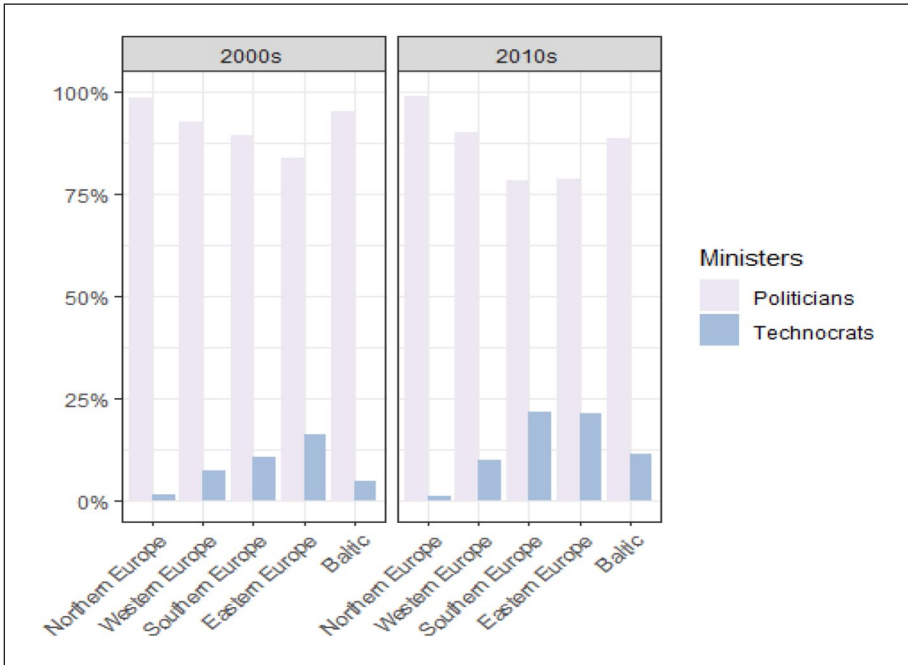
suggested by previous research limited to a smaller number of cases or to specific positions (Andeweg, 2000; Costa Pinto et al., 2018; McDonnell and Valbruzzi, 2014; Strøm, 2000). In the TMD, a total of 845 (or 11.9%) of all ministers are technocratic ministers<sup>6</sup> (compared to less than 5% in McDonnell and Valbruzzi’s study limited to technocratic-led governments only), meaning that they had never been elected, were not party members at the time of their appointment, and acquired expertise directly relevant to their portfolio.<sup>7</sup> The countries with the highest total number of technocratic ministers are Poland (89), Bulgaria (88) and Czech Republic (81). Figure 1 shows the average number of technocratic ministers per government by country (see also Figure 1A in Appendix 1): the results show that Cyprus (7.2 ministers per government), Bulgaria (7.3) and Hungary (7.4) are the countries where technocratic ministers are the most common. In these three countries, technocratic ministers represent more than one-fourth of the total ministers. In that respect, technocratic ministers seem to be primarily an Eastern and Southern European phenomenon, which corroborates previous research suggesting that technocratic appointments are more common in younger democracies (Costa Pinto et al., 2018).

In terms of evolution over the two decades covered by the TMD, we can observe a significant increase in the proportion of technocratic (vs partisan) ministers, which rose from 9.5% of all appointed ministers in the 2000s to 14.2% in the 2010s (Figure 2).

However, the growth was not uniform across Europe (Figure 3). We clustered the countries in five different areas: Northern Europe, Southern Europe, Western Europe, Eastern Europe and the Baltic states. The percentage of technocratic ministers increased substantially in the Baltic states (140%), Southern Europe (103%) and Western Europe (59%), moderately in Eastern Europe (36%), and decreased in Northern Europe 26%.

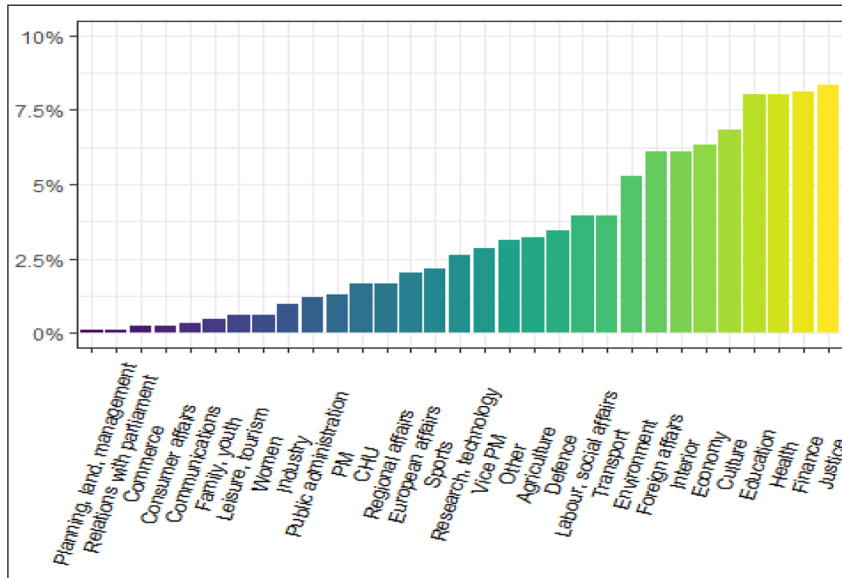


**Figure 2.** Percentage of Technocrats (Left), Non-Elected Ministers (Centre) and Non-Partisan Ministers (Right) Per Decade in the TMD Dataset. Source: Own elaboration from TMD.



**Figure 3.** Distribution of Technocratic Ministers by Macro-Area and Decade. Source: Own elaboration from TMD.

Another interesting finding relates to the portfolios which technocratic ministers are most often assigned. As shown in Figure 4, they occupy a wide range of portfolios, the most recurrent of which is Justice (accounting for 8.4% of all technocratic appointments), followed by Health (8.2%), Finance (8%), Education (7.9%), Culture (6.8%), Economy (6.4%), Interior (6%), Foreign Affairs (6%) and Environment (5.1%) in last place. This



**Figure 4.** Technocratic Ministers' Portfolios.

Source: Own elaboration from TMD.

diversity shows that technocratic ministers are assigned to diverse portfolios and not merely to economic-related ones (Costa Pinto et al., 2018; Valbruzzi, 2020). Nevertheless, finance and economy ministers combined represent 15.8%, 14.8% and 12.2% of the total number of technocratic ministers in Eastern, Southern and Western Europe, respectively (Appendix 1, Table 2a). One important finding to be highlighted is that Prime Ministers account for only a small minority of technocratic appointments: 3% in Southern Europe, 2% in Eastern European, 1% in Western Europe and none in the Baltic states and Northern Europe. This indicates that technocratic-led governments (21 out of 299 governments and 19 Prime Ministers in total, see Appendix 1, Table 3a) are only the tip of the iceberg of technocratic ministers in Europe.

### *Who Are the Technocratic Ministers in European Cabinets?*

Another key contribution of the TMD is that it provides more detailed information on who the technocratic ministers are than previous research. First, there is a significant gender imbalance among partisan and technocratic ministers: almost three-quarters of all partisan and technocratic ministers are men (see Appendix 1, Table 4a). Second, it provides information on their educational background, confirming earlier studies (Costa Pinto et al., 2018) showing that most of them are highly educated. About 36.8% of technocratic ministers identified in the TMD hold a PhD (Table 1), with percentages exceeding 40 in Eastern and Western Europe. While economics and law are by far the most common disciplines, accounting for more than 50% of technocratic ministers with a university degree, an important share of technocratic ministers (17%) have also obtained a degree in STEM (science, technology, engineering and mathematics) disciplines (Appendix 1, Table 6a).

**Table 1.** Degree, Education and Career Background of Technocratic Ministers in Europe.

Degree	%	Education	%	Career	%
PhD	37	Law	26	High-ranking civil servant	32
Master degree	58	Economics	26	Academic	19
Bachelor degree	4	STEM	17	Business executive	15
Other	1	Social Science	10	Law career	9
		Humanities	7	Diplomat	5.5
		Medicine	6	Medical doctor	3.5
		Other	8	Other	16

Source: Own elaboration from TMD.

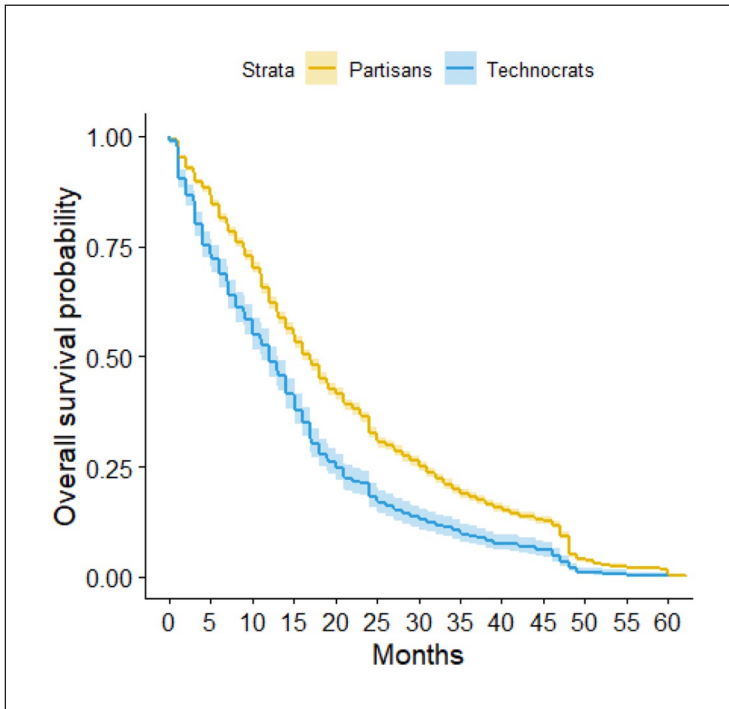
STEM: science, technology, engineering and mathematics.

Finally, the TMD provides information about the professional background of technocratic ministers before entering politics. One of the key findings is the prevalence of civil servants, representing 32% of all technocratic ministers (+5% of diplomats), which highlights that around one-third of technocratic ministers were already active in state apparatus before entering government. The next most common professional backgrounds are academia (19%), the business sector (15%) and legal professions (9%). These findings are in line with previous research on the professional background of non-partisan ministers (Costa Pinto et al., 2018). There are, however, interesting differences across geographical subregions, as high-ranking civil servants are more common than academics in Eastern Europe (37%), the Baltic states (35%) and Western Europe (23%), while in Southern Europe, technocrats predominantly come from academic backgrounds (29%) (Appendix 1, Table 7a).

### *How Long Do Technocratic Ministers Stay in Power?*

Another question that we address with the TMD is how long technocratic ministers stay in power compared to partisan ministers. So far, the literature has focused on the appointment of technocratic finance ministers during financial crises (Alexiadou and Gunaydin, 2019), suggesting that technocratic ministers have a limited shelf life. Building on that observation, we might wonder whether they are appointed only to solve political and economic gridlocks and would subsequently be dismissed when crises are solved. This was the case, for example, of the Monti government in Italy, Papademos government in Greece, Rusnok government in Czech Republic and Gerdzhikov government in Bulgaria, among others. Furthermore, previous research has also shown that technocratic ministers are less capable of securing a second cabinet appointment than partisan ministers (Costa Pinto et al., 2018)

In order to verify whether the difference between the mean length of stay in office for technocratic and partisan ministers is robust to more stringent tests, we have run a survival analysis of all ministries in all countries (with few exceptions, see Appendix 1, Survival analysis – exclusions). The survival analysis is aimed at showing whether partisan ministers remain in office longer than technocratic ministers. Figure 5 shows the differences between technocratic and partisan ministers' length of stay in cabinets in the whole dataset: the x-axis reports the monthly duration, while the y-axis reports the



**Figure 5.** Survival Probability of Technocratic and Partisan Ministers.

survival probabilities. The figure shows that being a technocratic minister decreases the probability of staying longer in office: technocratic ministers reach the 0.5 probabilities after about 12 months, while partisan ministers reach the same probabilities after about 17 months. The gap increases further between 20 and 30 months.

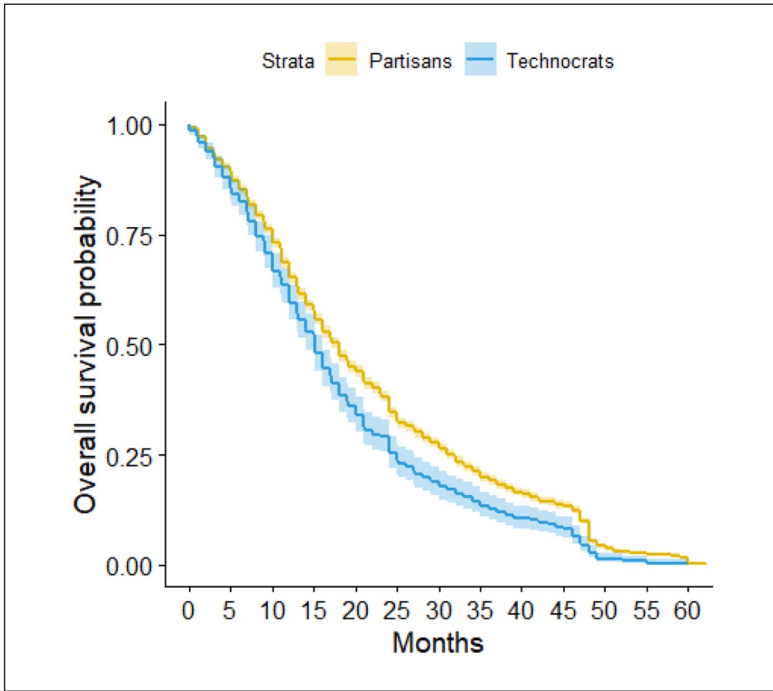
Yet, it appears that the gap in length in office is mostly due to technocratic ministers who were members of fully technocratic or technocratic-led cabinets. If we only consider partisan-led cabinets (with a partisan PM), the differences disappear (Figure 6). In this case, the likelihood of remaining in office of both technocratic and partisan ministers is almost the same. Therefore, when appointed to more common partisan cabinets, technocratic ministers do not stay any shorter or longer in office than partisan ministers.

To confirm these findings, we ran two Cox proportional hazards models as robustness checks (the methodological specification as well as the models are presented in Appendix 1 in Tables 8a and 9a). They confirm the results: ministers in technocratic and caretaker governments stay in office significantly less than the reference category (coalition government).<sup>8</sup>

## Conclusion

Over the last decade, a growing body of literature has expanded our knowledge about the prevalence, characteristics and ministerial portfolios of technocratic ministers (Costa Pinto et al., 2018; McDonnell and Valbruzzi, 2014); the factors leading to the





**Figure 6.** Survival Probability of Technocratic and Partisan Ministers Appointed in the Partisan Governments.

appointment of technocratic ministers (Alexiadou and Gunaydin, 2019; Emanuele et al., 2022; Wratil and Pastorella, 2018); and the impact of technocratic appointments on democratic quality (Bertsou and Caramani, 2020; Pastorella, 2016). In this article, we present a novel dataset (TMD) that allows studying the causes, characteristics and consequences of technocratic appointments to ministerial positions. By including data on all ministerial portfolios of all governments in 31 European democracies between 2000 and 2020, this dataset expands on previous research limited to a smaller number of countries or to specific governments (technocratic-led/caretaker) or government positions (PM or Minister for Finance). It also builds on previous research by recording information about the education and professional backgrounds of technocratic ministers (enabling us to assess whether their expertise matches their portfolio) and on the characteristics and composition of the cabinets to which all technocratic and partisan ministers are assigned.

First, it shows that although the presence of technocratic ministers is not widespread, their numbers are steadily increasing. Furthermore, technocratic ministers are not uniformly distributed across Europe. In Southern and Eastern Europe, technocratic ministers constitute a substantial and relevant minority. On the opposite pole, Northern and Western European countries are much less used to selecting technocratic ministers and the growth in terms of absolute appointment is modest. Second, we observe that technocratic ministers are mostly men with high educational attainment and a professional background as a high-ranking civil servant, academic or business executive. Third, in terms of political

role, we can see that technocratic ministers are appointed across a wide range of portfolios (justice, environment, culture, education, finance, foreign affairs, interior). The assumption that technocrats are most often appointed to the ministries of economy or finance does not hold across European democracies, except (partially) in Southern and Eastern European countries. Finally, the new dataset shows that there are two types of technocratic ministers in Europe: those who stay in office for a shorter period of time (to deal with crisis situations) and those who are members of traditional partisan cabinets and stay in power as long as partisan ministers.

Finally, we conclude this article by underlining that the present study is only a first step towards a more comprehensive understanding of the appointment technocratic ministers. In particular, research is needed to build a better understanding of the conditions that seem to facilitate the appointment of such specific types of ministers. Other factors such as, for example, the ideology of the government, or the strength of the parties in government might also play a role and should be examined more carefully in the near future. We hope that the TMD would also serve that purpose for the scholarly community interested in exploring political elites.


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### Supplemental material

Additional supplementary information may be found with the online version of this article.

### Notes

1. [The dataset will be disclosed when the paper will be published, its DOI is covered now to maintain anonymity].
2. Ministers might appear more than once in the same cabinet, for example, if they change portfolios during the term or if they were Deputy Prime Minister in addition to holding a specific portfolio. In such cases, they will appear in two rows in the dataset. However, these duplicate cases are not counted in the total number of ministers per government. For further information related to the coding, see the Codebook.
3. The Swiss case is omitted from the count of the governments.
4. We did not consider, however, that being member of a trade union or of other interest groups could be counted as partisan ministers. It might be the case in some countries and for some parties, like labour parties, that might have close structural ties with trade unions or other organizations. But applying a general rule across 31 countries was not possible.
5. Sophie Karmasin in Austria is one example: her working background was coded as business executive (and she has a degree in economics). In other cases such as Philippe Bas in France or Kinga Göncz in Hungary, the ministers have also other portfolios, which were related to the field of expertise of the ministers (e.g. social affairs).
6. National systems of ministerial appointments differ vary from country to country. The percentage might be slightly higher, when excluding countries, where technocratic minister, following our definition, cannot be appointed, such as UK and Ireland (see also Note 7). The percentage of technocratic ministers excluding UK and Ireland is 12.7%.

7. Those who were never elected (and never candidate) are 1295, and those who had never been party members are 1026. Combining the two criteria, we get a total of 845 technocratic ministers in our dataset.
8. While, with the peculiar case of single-party governments (the coefficient is significant only at  $p < 0.1$  level and the results are mainly driven by single-party minority government, which are shorter than other partisan governments), there are no distinction between different partisan governments.

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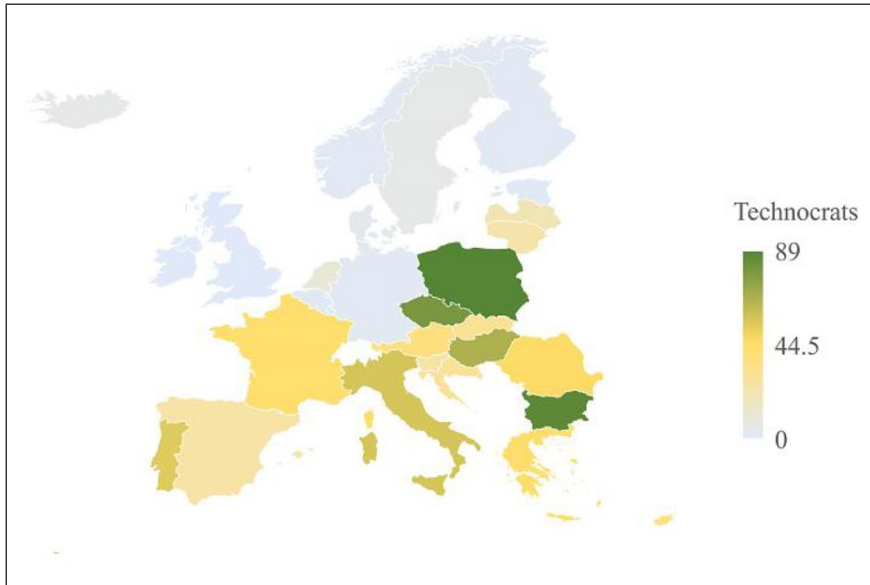
Sebastien Rojon is a postdoctoral researcher in political science at the Université libre de Bruxelles in Belgium. His research focusses on citizens' political engagement and attitudes towards democratic reform.

## Appendix I

### Political Studies Review

**Table IA.** Non-elected Ministers with Different Educational or Occupation Background with Respect to the Portfolio to Which They Were Appointed.

Country	First name	Surname	Position open	Position closed	Elected	Party member	Party flag	Government name	Legislature years	Government year
Italy	Letizia	Moratti	Minister of Public Education	Education	0	0	Go Italy	Berlusconi II	2001–2006	2001–2005
Italy	Letizia	Moratti	Minister of Public Education	Education	0	0	Go Italy	Berlusconi III	2001–2006	2005–2006
France	Claudie	Haigneré	Minister of European Affairs	European affairs	0	0		Raffarin III	2002–2007	2004–2005
Slovakia	Tomáš	Drucker	Minister of Health	Health	0	0	Direction (SMER, Slovenská Sociálna Demokracia)	Fico III	2016–2020	2016–2018
Latvia	Aivis	Ronis	Minister of Transport	Transport	0	0	Unity + Zlaters Reform Party	Dombrovskis III	2011–2014	2011–2014
Cyprus	Andreas	Gavriilidis	Minister of Health	Health	0	1		Papadopoulos I	2003–2008	2003–2008
Cyprus	Charis	Charalambous	Minister of Health	Health	0	1		Papadopoulos I	2003–2008	2003–2008
Cyprus	Erato	Kozakou-Marcoullis	Minister of Transport and Works	Transport (Public works)	0	0		Christofias I	2008–2013	2008–2013
Cyprus	Fotis	Fotiou	Minister of Defence	Defence	0	1		Anastasiades I	2013–2018	2013–2018



**Figure IA.** Total Number of Technocratic Ministers in Europe 2000–2020.  
Source: Own elaboration from TMD.

**Table 2a.** Distribution of Technocratic Ministers' Portfolios Per Country in Technocratic Ministers Dataset.

	Agriculture (%)	CHU (%)	Commerce (%)	Communications (%)	Consumer affairs (%)	Culture (%)	Defence (%)	Economy (%)	Education (%)	Environment (%)	
Northern Europe	10	0	10	0	5	10	0	5	0	5	
Western Europe	0	4	0	0	0	8	3	7	10	1	
Southern Europe	3	1	0	0	0	6	5	5	10	5	
Eastern Europe	3	2	0	1	0	6	3	7	7	6	
Baltic	9	0	0	0	0	17	2	7	9	9	
	European affairs (%)	Family, youth (%)	Finance (%)	Foreign affairs (%)	Health (%)	Industry (%)	Interior (%)	Justice (%)	Labour, social affairs (%)	Leisure, tourism (%)	
Northern Europe	0	0	0	5	5	5	0	15	10	0	
Western Europe	1	3	5	12	7	1	4	9	4	1	
Southern Europe	1	0	9	5	9	0	8	6	5	0	
Eastern Europe	3	0	9	5	8	1	5	10	3	1	
Baltic	0	0	2	9	11	0	9	4	2	0	
	Other (%)	Planning, land, management (%)	PM (%)	Public administration (%)	Regional affairs (%)	Relations with parliament (%)	Research, technology (%)	Sports (%)	Transport (%)	Vice PM (%)	Women (%)
Northern Europe	10	0	0	0	0	0	5	0	0	0	0
Western Europe	0	0	2	0	0	0	4	5	4	0	3
Southern Europe	2	0	3	3	1	0	4	0	5	2	0
Eastern Europe	4	0	1	0	2	0	2	3	4	5	0
Baltic	0	0	0	4	0	0	0	0	7	0	0

**Table 3a.** Technocratic Prime Ministers in Europe in the Technocratic Ministers Dataset.

Country	Name	Surname	Start date	End date	Coalition formula
Italy	Mario	Monti	Nov 11	Apr 13	Technocratic
Italy	Giuseppe	Conte	Jun 18	Sep 19	Minimal winning coalition government
Italy	Giuseppe	Conte	Sep 19	Feb 21	Minimal winning coalition government
Greece	Luca	Papademos	Nov 11	May 12	Technocratic
Greece	Panagiotis	Pikrammenos	May 12	Jun 12	Caretaker
Greece	Vassiliki	Thanou-Christophilou	Aug 15	Sep 15	Caretaker
Austria	Hartwig	Löger	May 19	Jun 19	Caretaker
Austria	Brigitte	Bierlein	Jun 19	Jan 20	Technocratic
Hungary	Péter	Medgyessy	May 02	Sep 04	Minimal winning coalition government
Hungary	Gordon	Bajnai	Apr 09	May 10	Single-party minority government
Croatia	Tihomir	Oresković	Jan 16	Jun 16	Minority coalition government
România	Dacian	Cioloș	Nov 15	Nov 16	Technocratic
Bulgaria	Simeon	Saxe-Coburg-Gotha	Jul 01	Feb 05	Minimal winning coalition government
Bulgaria	Marin	Raykov	Mar 13	May 13	Caretaker
Bulgaria	Plamen	Oresharski	May 13	Aug 14	Minority coalition government
Bulgaria	Georgi	Bliznashki	Aug 14	Nov 14	Caretaker
Bulgaria	Ognyan	Gerdjikov	Jan 17	May 17	Caretaker
Lithuania	Saulius	Skvernelis	Nov 16	Dec 20	Oversized coalition government
Czech Republic	Jan	Fischer	May 09	Jul 10	Technocratic
Czech Republic	Jiří	Rusnok	Jul 13	Oct 13	Caretaker
Czech Republic	Jiří	Rusnok	Oct 13	Jan 14	Caretaker

**Table 4a.** Gender Distribution of All Ministers in the Technocratic Ministers Dataset.

	Partisan (%)	Technocrats (%)
Female	25.1	25.4
Male	74.8	74.6

**Table 5a.** Technocratic Ministers' Education Attainment in the Technocratic Ministers Dataset.

	Bachelor degree (%)	Master degree (%)	Military school (%)	No degree (%)	PhD (%)
Northern Europe	16	58	0	6	19
Western Europe	1	55	0	3	42
Southern Europe	7	62	2	0	29
Eastern Europe	4	55	0	1	40
Baltic	0	73	0	0	27

**Table 6a.** Technocratic Ministers' Education Background in the Technocratic Ministers Dataset.

	Economics (%)	Law (%)	STEM (%)	Social sciences (%)	Humanities (%)	Medicine (%)	Agriculture (%)	Military (%)	Other (%)
Northern Europe	34	24	0	31	3	0	7	0	0
Western Europe	18	38	11	14	7	6	2	4	0
Southern Europe	32	31	22	8	4	1	1	0	0
Eastern Europe	27	22	16	7	7	8	3	3	6
Baltic	10	17	22	20	15	12	5	0	0

STEM: science, technology, engineering and mathematics.



**Table 7a.** Technocratic Ministers' Professional Background in the Technocratic Ministers Dataset.

	High-ranking civil servant (%)	Academic (%)	Business executive (%)	Law career (%)	Diplomat (%)	Labour Union/Lobby (%)	Medical doctor (%)	Military officer (%)	Clerk (%)	Other (%)
Northern Europe	39	13	16	6	0	16	0	0	6	3
Western Europe	23	14	19	13	12	5	4	3	1	5
Southern Europe	27	29	14	12	5	1	2	3	3	5
Eastern Europe	37	18	15	6	4	3	4	4	2	9
Baltic	35	7	20	2	5	6	7	0	7	10

STEM: science, technology, engineering and mathematics.

*Survival Analysis – Methodology.* The first Cox proportional hazards model (Table 8a) estimates whether the duration in office (dependent variable) is related to being a technocrat or a partisan minister (dummy independent variable). We also add further controls, namely, the total number of ministers in each government, the coalition formula, the GAL-TAN and Left-Right position of the most voted party in government (for further details see Control variables – details of the operationalization).

The second model (Table 9a) estimates whether the duration in office depends on being technocrat or partisan minister. Contrary to the model in Table 7a, thus, the dummy that distinguishes between partisan and technocratic ministers is not included among the covariates. The other covariates stay the same.

*Survival Analysis – Exclusions.* We exclude Switzerland, for which the Federal council is anomalous in the duration in office of the ministries and in the way the federal government is composed. We also excluded the governments in office at the time of compiling the dataset as the legislatures have not ended yet and, thus, the duration in office of the ministries cannot be properly computed. Finally, four French caretaker governments were excluded from the analysis: Raffarin I (May–June 2002), Fillon I (May–June 2007), Ayrault I (May–June 2012), Philippe I (May–June 2017). These caretakers were neither installed for an impasse in the coalition formation, nor they were the result of the impossibility to create a coalition of parties in the Parliament. They were rather ‘in-between governments’, ensuring the switch from the previous to the new legislature. All of them were followed by a government headed by the same Prime Minister, with a very similar composition.

#### *Control Variables – Details of the Operationalization*

*Government Formula.* Levels: Single-party majority government, Single-party minority government, Minority coalition government, Minimal winning coalition government, Oversized coalition government, Technocratic, Caretaker.

For the sake of clarity in our model, we create a four-level variable comprising (1) Singly-party governments (majority and minority), (2) all combinations of coalition governments and then (3) Technocratic governments and (4) Caretaker governments.

*Total Number of Ministers.* Total number of ministers in charge. How ministers are counted count: all individuals who participated in the government; if one minister held several positions, only one is counted; if two persons held the same ministry, two ministers are counted.

*GAL-TAN and Left-Right Positions.* GAL-TAN and Left-Right positions of the political parties in government are taken from Chapel Hill expert survey (Bakker et al., 2020). We use LRGEN variable for Left-Right position and GALTAN for the GAL-TAN position. GAL-TAN and Left-Right positions of the parties are the available scores closest in time to the beginning of the legislature in which the parties were in government.

**Table 8a.** Cox Proportional Hazards Model – Duration in Office.

	Coef	Exp(coef)	SE(coef)	z	Pr(> z )
Partisan minister	0.206693	1.229605	0.043095	4.796	1.62e-06***
Total number of ministers	0.009019	1.009059	0.001980	4.554	5.26e-06***
Gal-Tan	-0.294403	0.744976	0.031220	-9.430	<2e-16***
Left-Right	0.275613	1.317338	0.031199	8.834	<2e-16***
Single-party (ref. coalition)	0.061598	1.063535	0.032593	1.890	0.0588.
Caretaker (ref. coalition)	2.040046	7.690960	0.071716	28.446	<2e-16***
Technocratic (ref. coalition)	1.095828	2.991658	0.110143	9.949	<2e-16***

	Exp(coef)	Exp(-coef)	Lower 0.95	Upper 0.95
Partisan minister	1.230	0.8133	1.1300	1.338
Total number of ministers	1.009	0.9910	1.0052	1.013
Gal-Tan	0.745	1.3423	0.7008	0.792
Left-Right	1.317	0.7591	1.2392	1.400
Single-party (ref. coalition)	1.064	0.9403	0.9977	1.134
Caretaker (ref. coalition)	7.691	0.1300	6.6825	8.852
Technocratic (ref. coalition)	2.992	0.3343	2.4108	3.712

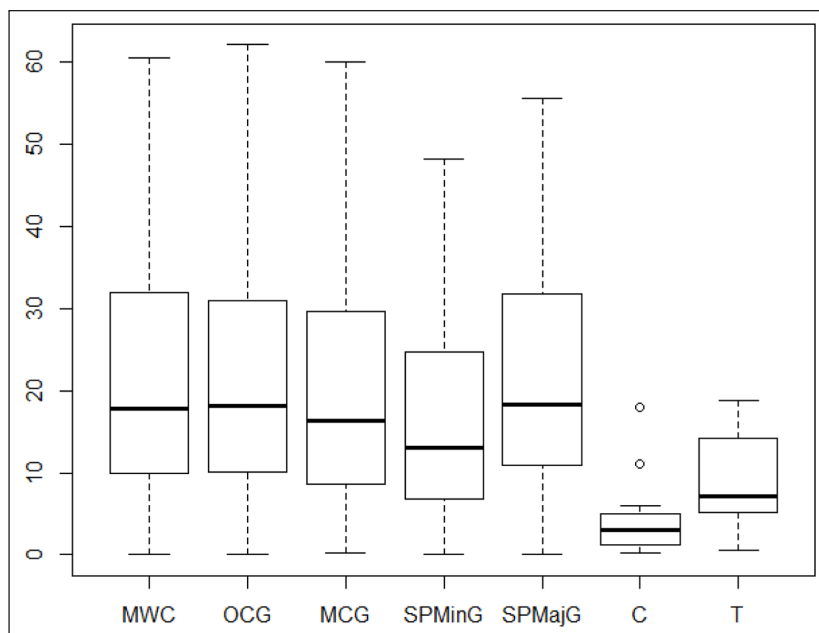
Concordance = 0.57 (SE = 0.004).

Likelihood ratio test = 740.9 on 7 df,  $p < 2e-16$ .

Wald test = 1061 on 7 df,  $p < 2e-16$ .

Score (logrank) test = 1364 on 7 df,  $p < 2e-16$ .

\*Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05.

**Figure 2a.** Office Duration of Types of Governments.

Source: Own elaboration from TMD.

MWC: Minimal Winning Coalition Government; OCG: Oversized Coalition Government; MCG: Minority Coalition Government; SPMinG: Single-party Minority Government; SPMajG: Single-party Majority Government; C: caretaker; T: technocratic.

**Table 9a.** Cox Proportional Hazards Model – Duration in Office Depending on Being Technocrat or Partisan Minister.

	Coef	Exp(coef)	SE(coef)	z Pr(> z )	Pr(> z )
Total number of ministers	-0.007870	0.992161	0.006572	-1.198	0.231
Left_Right	-0.545918	0.579310	0.099179	-5.504	3.71e-08***
Gal_Tan	0.327697	1.387769	0.099625	3.289	0.001**
Single-party vs coalition	0.027478	1.027859	0.105508	0.260	0.795
Caretaker vs coalition	1.682189	5.377315	0.225382	7.464	8.41e-14***
Technocratic vs coalition	2.770633	15.968734	0.155095	17.864	<2e-16***
	Exp(coef)	Exp(-coef)	Lower 0.95	Upper 0.95	
Total number of ministers	0.9922	1.00790	0.9795	1.0050	
Left_Right	0.5793	1.72619	0.4770	0.7036	
Gal_Tan	1.3878	0.72058	1.1416	1.6870	
Single-party vs coalition	1.0279	0.97290	0.8358	1.2640	
Caretaker vs coalition	5.3773	0.18597	3.4572	8.3639	
Technocratic vs coalition	15.9687	0.06262	11.7829	21.6415	

Concordance = 0.631 (SE = 0.013).

Likelihood ratio test = 247.2 on 6 df,  $p < 2e-16$ .

Wald test = 402.3 on 6 df,  $p < 2e-16$ .

Score (logrank) test = 692 on 6 df,  $p < 2e-16$ .

\*Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05.