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The revolving door of former civil servants and firm value: A comprehensive approach[☆]

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ABSTRACT

Previous studies on the “revolving door” phenomenon primarily focused on politicians and high-ranking civil servants. This paper comprehensively surveys the transition of all ranks of civil servants and political figures into the private sector, investigating the determinants and implications for firm value. Using a comprehensive dataset of former government officials hired by publicly listed firms in Israel from 2007 to 2015, the study reveals that 60% of these firms hire former government officials, constituting 9% of all directors and executives. Findings indicate that firms with higher regulatory burdens are more likely to hire former government officials. Additionally, the appointment of a former government official to a firm’s management is associated with an increase in firm value. Notably, the value increase is not dependent on the appointee holding a high-ranking government position. The effect is more significant when the appointee is the first former government official hired by the firm, and it diminishes with the time elapsed since their departure from the political or civil service positions. These results suggest that it is the unique capital accumulated during civil service that impacts firm value, rather than general human capital.

1. Introduction

The benefits of political connections to a firm have been widely documented in recent years. Evidence exists from a wide range of countries – developed and developing, corrupt and less corrupt, democratic and dictatorial – of the effects of political connections on a broad range of financial and business outcomes. The evidence suggests that political connections affect a firm’s value (Roberts, 1990; Fisman, 2001; Faccio, 2006; Goldman et al., 2009; Luechinger and Moser, 2014), performance and profitability (Khwaja and Mian, 2005; Amore and Bennedson, 2013; Bussolo et al., 2022), credit spreads and covenants (Li et al., 2008; Houston et al., 2014; Ho et al., 2015), access to capital (Khwaja and Mian, 2005; Claessens et al., 2008; Boubakri et al., 2012), access to government contracts

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(Goldman et al., 2013; Brogaard et al., 2021; Schoenherr, 2019), bailouts (Faccio et al., 2006), executive compensation and pay dispersion (Chizema et al., 2015), and accounting quality (Guedhami et al., 2014).¹

The literature usually identifies political connections with the presence of one or more former political figures among the firm's shareholders, board members, or top executives (e.g., Faccio, 2006; Faccio et al., 2010; Lester et al., 2008; Chaney et al., 2011; Blanes i Vidal et al., 2012; Houston et al., 2014; Luechinger and Moser, 2014; Baturo and Mikhaylov, 2016; Faccio and Hsu, 2017; Shin et al., 2018; Hu et al., 2020; Zhang and Truong, 2019).² In these studies, the focus is usually on politicians (e.g., heads of state, parliament members, or ministers) or high-ranking officials from the civil service (e.g., senior officials of government institutions). While the potential and actual gains from connections to the political system have been widely surveyed and empirically proven, advantages also exist for a firm from being connected to the civil service in its country; similar to political connections, this connection can be made by hiring a former civil servant (FCS)³.

FCSs, using the specific expertise and social capital accumulated in their years of serving in one or more government institutions, can benefit the firm in various ways; for example, they have considerable insights into government institutions and the inner workings of legislative and regulatory processes (Luechinger and Moser, 2014), current and future policy matters and upcoming government decisions (Blanes i Vidal et al., 2012), and the competitors of their future employers (Luechinger and Moser, 2014). A firm can translate this type of capital into value by reducing information asymmetry between government and business, thereby making inner-firm decision making more efficient and less costly. In this sense, FCSs serve as intermediaries that bring relevant and important information to the firm (Austen-Smith, 1996; Shive and Forster, 2017)⁴ as well as help to “grease the wheels,” especially if their hiring firm faces a heavy regulatory burden (Kaufman and Wei, 1999; Akcigit et al., 2018).

Alternatively, they can add value by helping to secure preferential treatment from the government, such as a more lenient approach to regulation violations and priority in the signing of government contracts and procurements (Hong and Lim, 2016; Zhang and Truong, 2019; Trinh et al., 2022; Ruckteschler et al., 2022). Thus, FCSs add value through the quid-pro-quo channel (Grossman and Helpman, 1994; Shive and Forster, 2017), which is a view also known in the literature as “the grabbing hand” (Shleifer and Vishny, 1994; Akcigit et al., 2018). Former government officials can also be hired as a reward for past preferential treatment. This option gives rise to the “captured regulator” problem, where acting government officials consider future employment options in a manner that affects their actions, sometimes clearly against the public interest.^{5 6}

Establishing a beneficial connection to the civil service could be highly useful when the hired person is a high-ranking FCS.⁷ However, hiring a lower-ranking FCS can also be useful. Indeed, relative to high-ranking FCSs, lower-ranking FCSs may possess more detailed knowledge of the various aspects of their government institution, which is knowledge they can use outside of the civil service.⁸ Moreover, high-ranking FCSs remain under public scrutiny even after they leave the civil service, and therefore, firms might find it more difficult to use their capital without incurring public criticism – whether justified or not (Cingano and Pinotti, 2013; Luechinger and Moser, 2014). In addition, in most countries, post-civil service employment cooling-off periods are also mandated for lower-ranking civil servants, which emphasizes the importance that the legal system attaches to former government officials at all levels (Martini, 2015; OECD, 2010).

Nevertheless, mostly due to unavailable data, the literature lacks a comprehensive survey of the scope of the revolving door into the

¹ There are also costs associated with the hiring of ex-government officials: If they are hired for their government experience, they may not provide effective monitoring and advisory services because they often lack industry experience and serve in multiple directorships, which reduces the amount of time they can spend serving each firm (Kang and Zhang, 2018). In addition, if they still hold their political affiliation, they might extract political benefits at the expense of other stakeholders, which raises their incentives for rent seeking and the expropriation of the firm's resources (Boubakri et al., 2012). Empirically, Bertrand et al. (2018) demonstrate that politically connected CEOs alter corporate employment decisions to help politicians in their re-election efforts, by increasing job and plant creation rates or lowering job and plant destruction rates in election years, especially in politically contested areas.

² Schoenherr (2019) goes slightly further in his case study and defines politically connected firms as those with board members who share the same social networks as the South Korean president. Frye and Yakovlev (2016) define a firm's relation with the state based on its scope of business with the state – providing public goods, selling to the state, or receiving financial or organizational assistance from the state.

³ Some papers identify political connections with donations to political candidates (e.g., Claessens et al., 2008; Goldman et al., 2009; Brogaard et al., 2021).

⁴ From a behavioral standpoint, Jabotinsky (2017) argues that former regulators are likely to retain their public sector point of view and workflow even after leaving the civil service. However, even if this is likely, it only holds true for the short period between them leaving the civil service and adopting the private sector perspective and workflow of their new employer.

⁵ According to Baleiras and Santos (2000), the revolving door of regulators and politicians from their government position into the business sector can in fact add social welfare if the business sector's interests are aligned with social preferences. If not, the revolving door will have a negative effect on social welfare.

⁶ Noteworthy, not all empirical evidence supports preferential treatment prior to leaving the civil service or political system. For example, Baturo and Mikhaylov (2016) track the transitions of heads of state and governments into the private sector and do not find any effect of private sector-leaning policy on the probability of being hired by the private sector. They suggest that this evidence favors the explanation that the private sector employs those former leaders only perceived as responsible, not those who implement policies with their future careers in mind.

⁷ Hong and Kim (2017) demonstrate that South Korean state-owned firms that are run by career civil servants receive better performance evaluations than state-owned firms administered by other types of managers. They further demonstrate that this result is more likely to be a product of lobbying or regulatory capture than of greater expertise.

⁸ By contrast, Lester et al. (2008) claim that only high-ranking former civil servants and politicians add value, as only they have good national and international access and influence.

private sector for FCSs and their effect on different firm outcomes, particularly the transition of middle- and low-ranking civil servants (hereinafter “working-level civil servants”). Studies that do include working-level FCSs restrict attention to those who left a specific government institution, such as regulatory authorities (Shive and Forster, 2017), the U.S. Department of Defense (Luechinger and Moser, 2014), or the U.S. Armed Forces (Benmelech and Frydman, 2015).

In this paper I make three contributions to the existing literature on politically connected firms and the revolving door of former government officials. The first contribution is the comprehensiveness of the analysis. Comparing to other studies, the scope of government institutions and ranks of former officials whose transitions to the private sector are mapped in this paper is the widest and the most comprehensive.⁹ Using official administrative sources, I identify the type of civil service or political experience possessed by top executives and board directors of publicly traded firms in Israel during 2007–2015 and define their rank in their last civil service or political position. In addition, I characterize the firms that hire them, and test the effect of their appointment on the hiring firm’s value. Unless explicitly mentioned otherwise, I use the term FCS (former civil servant) to indicate a person with any past political or civil service experience.

The second contribution is in the realm of political connections’ economies of scale, where the following questions are relevant: Do political connections have a constant – or even increasing – return to scale? Is the concept of “the more the merrier” applicable? Alternatively, are political connections an input that has decreasing marginal returns and, once established, is there less value in quantitatively strengthening these ties? To the best of my knowledge, these questions have not yet been addressed and systematically analyzed in the literature.¹⁰

The third contribution is made by addressing the question of the decaying nature of FCSs’ unique capital. Lester et al. (2008) demonstrate that the probability of a former government official being hired as a director on a firm’s board decreases with the time that has elapsed since they left their last position in the civil service. However, most studies that have tested for FCSs’ effect on firm outcomes have not considered the implications of the decaying nature of civil service experience. To the best of my knowledge, Luechinger and Moser (2020) is the only study that addresses this question, and finds a diminishing effect, but it uses a small sample of former EU commissioners. Here, I systematically examine whether the decaying nature of FCSs’ unique capital is reflected in a diminishing effect on the firm’s value. The results of this inquiry may also elucidate the ongoing discussion regarding the nature of the capital that an FCS brings to a firm – that is, whether it is just high general human capital or their “civil service capital” (e.g., connections and knowledge). If it is the former, one should expect no decreasing marginal effect conditional on the time elapsed since they left the civil service. However, if it is the latter, a decreasing marginal value would be more reasonable.

Using the classic event-study methodology, I estimate the value of an FCS by testing for abnormal changes in the price of stocks around the appointment of an FCS as a director or top executive. By including the number of FCSs employed by a firm at the time it hires a new FCS, I test for a decreasing marginal value of FCSs; furthermore, by including the number of years that have elapsed between the time of sample observation and the departure of the FCS from their last position in the civil service, I test for the decaying nature of FCSs’ unique capital. I mitigate the concern of selection bias arising from the nonrandom sorting of FCSs into firms by employing a panel structure and granularity for my data to estimate a fixed-effects estimator at the firm-year level. Thus, I control for any unobservable time-variant or -invariant heterogeneity that might lead to selection bias as well as ensure that my results are driven only by firm and year variations (Cingano and Pinotti, 2013; Emery and Faccio, 2022; Bussolo et al., 2022).

The main findings of this study are summarized as follows. I find that the probability of having an FCS on board or in a firm’s management increases with the firm’s size, its leverage, and the level of the regulatory burden imposed on it. As for the effect on firm value, I find that hiring an FCS as a top executive or director has a positive and significant effect, with – to the least – no additional premium associated with high-ranking FCSs or with a hire of a firm’s former regulator. This effect is evident only if the hired FCS is the first, with no additional value added by an additional hired FCS, a finding that supports the diminishing marginal value of FCSs. Moreover, I find that the effect decreases with the number of years elapsed since the FCS left their last position in the civil service, demonstrating a decaying nature of FCSs’ unique capital.

The remainder of this paper is organized as follows: Section 2 presents the data used for estimation; Section 3 describes the empirical strategy; Section 4 characterizes the revolving door of former civil servants; Section 5 presents the effect of former civil servants on firms’ value; and Section 6 presents additional tests and a sensitivity analysis. Lastly, Section 7 discusses the results and concludes the paper.

2. Data

In this section I present the data I use in this paper and its sources. My main source of data is financial and annual reports of firms

⁹ In an as yet unpublished paper, Emery and Faccio (2022) address the same task and map the revolving door of FCSs and politicians into U.S. public firms. Kang and Zhang (2018) include all ranks of civil servants and government institutions to demonstrate how government experience affects different firm outcomes, but their focus is only on outside directors. The present study differs from their study as it uses official administrative sources for documenting past experience in the civil service. Their reliance on career experience as reported in BoardEx data might lead to the mismeasurement of civil service experience, as these data are based on business intelligence and publicly available sources – although not necessarily official ones.

¹⁰ Cingano and Pinotti (2013) demonstrate this for the number of local politicians employed by a firm. This number is positively correlated with firm revenue, but it has a decreasing marginal effect.

that trade stocks or bonds on the Tel Aviv Stock Exchange (TASE) during 2007–2015.¹¹ For each firm, I gather the data on directors and high-ranking executives from the closest time to the last day of the calendar year. Each firm is obliged to report all of its directors and high-ranking executives, but the number of such executives varies between firms according to their decision, which I explain in the next paragraph. I include dual-listed firms (even though their reports are different) but exclude nonlocally registered firms that are traded on the TASE. In addition, I include private listed firms held by banks and insurance companies whose only purpose is to issue bonds to fund their holders.

Furthermore, I gather managers' civil service experience from two main reliable and official sources. The first is Regulations 26 and 26a of the annual reports, in which firms report the personal details of their board members (Reg. 26) and high-ranking executives (Reg. 26a). There is a minimum set of executives that must be reported, beyond which each firm chooses which executives to include in the report. Therefore, the number of executives reported varies between firms and years.¹² The report includes various data about the board members and high-ranking executives, including their name, position, birth date, gender, and education.¹³

One of the items reported is the manager's experience in the last 5 years. This is a crucial source for identifying whether the manager has any experience in the civil service. However, by definition, this experience is limited to the last 5 years. I complete earlier civil service experience using a unique dataset of all workers in the political system and all government institutions since 1990. This detailed dataset enables me to search for managers' experience in the civil service in cases where the relevant report does not provide sufficient or any information.

Other studies have used a manager's name to search for their connections to the civil service using other data sources – mostly open ones. This methodology has some clear drawbacks that might lead one to underestimate the level of political connectedness of firms. This is true especially for working-level FCSs as they are much more anonymous and tend to be less visible in open sources. A critical attribute of my dataset is that it includes the ID numbers of managers, and therefore, the identification of their work histories is almost complete. However, to minimize the risk of overlooking a manager's civil service experience, I complete my dataset with a comprehensive search of open sources to ensure that no under-identification occurs.

For each manager, I collect their personal data (name, ID number, birth date, age, gender, nationality, and education), their role in the firm (e.g., chairperson of the board, board member, executive, or outside director), the date the appointing firm officially reported the TASE about the appointment, and whether they have civil service experience.

I define a manager as an FCS if they were employed by one of the following civil service institutions: the Israeli parliament, Knesset (e.g., ministers and Knesset members), all government offices (e.g., Ministry of Finance, Ministry of Communications, or Ministry of Foreign Affairs), related and independent regulatory authorities (the Israel Tax Authority, Israel Securities Authority, Bank of Israel, and Antitrust Authority), the defense sector (IDF, GSS, and Mossad), interior security (police, prison service, and fire service), and local authorities. Diplomats and special advisors are also included, while interns and military officers with an army rank lower than the five highest ones are not.¹⁴

In addition to a dichotomous definition of civil service experience (i.e., a dummy variable that takes a value of 1 if the FCS has civil service experience and 0 otherwise), I use the following set of dummy variables to code their civil service experience in detail: the institution they served in (e.g., army, government office, ISA, or Knesset) and the highest rank they achieved (e.g., working-level civil servant, high-ranking official, or senior-level official). If an FCS has served in more than one institution, I code each type of experience separately, while the coding of their rank reflects the rank held in their last position. I define two ranks of officials. The first is a *Senior FCS*, who is an FCS who was either the head of a government institution, in its first-tier management (i.e., head of departments), deputies of heads of department or heads of divisions within departments. The other rank, *working-level FCS*, includes all other FCSs. A complete description of each rank by government institution can be found in [Table A1](#) in the Appendix.

In addition, for each manager with civil service experience, I look for the year they left their last position and calculate the number of years that have elapsed since then.

Moreover, I use the official Regulations Handbook to define whether each FCS is a former regulator of their hiring firm. This Handbook lists all regulating units in government departments and agencies along with their purpose. I map each regulating unit to the industry under its authority and assign a value of 1 if the FCS served in one (or more) of the hiring firm's industry, and 0 otherwise.

As for firm-level data, since my data consist of only publicly traded or listed firms, all accounting and market data are publicly available using TASE resources. These include financial statement data and derived financial ratios (e.g., total assets, leverage, and ROE) as well as market data (e.g., market value). To this, I add a novel industry regulation index (IRI) as a proxy for the regulatory burden imposed on a firm. I provide a sketch of the index in the following paragraphs, while a full description of the index can be found

¹¹ For a complete list of variables and definitions, please refer to [Table A1](#) in the Appendix.

¹² I find no systematic characteristics that explain the number of executives reported by a firm above the minimum requirement. In addition, no analyses in this paper substantially change when I limit the sample to include only the mandatory minimum set of executives.

¹³ As for dual-listed companies reported in U.S. Standards, I collect managers' work histories from Item 6.

¹⁴ This is because army service in Israel is mandatory, and therefore, many citizens have military experience. I define ex-military officers as those with civil experience only if they reached the five highest ranks (*Sgan Aluf* and above, equivalent to Lieutenant Colonel and above). This is because, until the sixth rank (including), promotion is mostly dependent on tenure. Promotion to the fifth rank requires the approval of the Chief of General Staff.

Table 1
Probability of being a connected firm: Regression results.

Dependent variable	(1) (2) (3) (4) (5)					(6)
	at least one FCS on firm's board or management (dummy, estimated using logit)					number of FCSs on firm's board and management (continuous, estimated using OLS)
	First five independent variables taken at time t			First five independent variables taken at time $t-1$	Sub-sample of firms with similar number of top executives and board members	
Log (assets)	0.39*** (0.06)	0.40*** (0.05)	0.39*** (0.06)	0.40*** (0.06)	0.37*** (0.08)	0.33*** (0.04)
Leverage	0.04* (0.02)	0.04* (0.02)	0.03* (0.02)	-0.01 (0.01)	0.09** (0.04)	0.02*** (0.01)
ROE	-0.01 (0.01)	-0.01 (0.01)	-0.01 (0.01)	-0.13 (0.18)	-0.01 (0.01)	0.0001 (0.0004)
Negative ROE (dummy)	-0.03 (0.17)	0.01 (0.17)	-0.02 (0.17)	0.04 (0.04)	0.06 (0.20)	0.09 (0.10)
Q	0.2 (0.14)	0.29** (0.14)	0.22 (0.14)	0.25 (0.15)	0.14 (0.19)	0.24** (0.10)
Dual-listed stocks (dummy)	-0.53* (0.31)	-0.56* (0.3)	-0.59* (0.32)	-0.64* (0.34)	-0.19 (0.39)	-0.20 (0.21)
Tradeable bonds (dummy)	-0.13 (0.19)	-0.28 (0.18)	-0.14 (0.19)	-0.15 (0.20)	-0.36 (0.24)	0.020 (0.13)
IRI		0.07 (0.04)	0.09* (0.05)	0.09* (0.05)	0.10* (0.06)	0.08** (0.03)
<i>TASE industries (dummies):</i>						
Financial services	0.25 (0.57)		0.31 (0.58)	0.27 (0.58)	0.14 (0.68)	0.22 (0.36)
Biomed	0.38 (0.4)		0.56 (0.41)	0.63 (0.43)	0.09 (0.48)	0.35 (0.26)
Technology	-0.25 (0.34)		-0.20 (0.34)	-0.15 (0.35)	-0.38 (0.41)	-0.09 (0.19)
Banks	1.06 (0.85)		0.86 (0.91)	0.89 (0.98)	0.08 (1.52)	1.94** (0.85)
Insurance	0.58 (0.65)		0.69 (0.66)	0.45 (0.69)	0.74 (1.10)	0.86* (0.50)
Commerce	0.41* (0.24)		0.56** (0.25)	0.56** (0.26)	0.45 (0.32)	0.12 (0.15)
Real estate	-0.43* (0.26)		-0.32 (0.26)	-0.29 (0.27)	-0.27 (0.31)	-0.32* (0.17)
Holdings	0.2 (0.25)		0.28 (0.26)	0.25 (0.27)	0.36 (0.32)	0.16 (0.17)
Gas and oil	1.60*** (0.47)		1.77*** (0.47)	1.55*** (0.47)	3.15*** (0.99)	0.19 (0.25)
Constant	-4.95*** (0.85)	-5.34*** (0.80)	-5.20*** (0.86)	-5.35*** (0.92)	-4.89*** (1.25)	-3.92*** (0.66)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
McFadden's R-square	0.092	0.075	0.096	0.096	0.0702	
Cox and Snell's R-square	0.120	0.096	0.120		0.089	
Adjusted R-square						0.328
Observations	3307	3307	3307	2851	1870	3307

This table presents estimations of FCS presence determinants. Log (assets) is the natural log of total assets; leverage is calculated by the share of liabilities in total assets; ROE is the annual return on equity, which takes only positive values and is winsorized at its 95th percentile; negative ROE is a dummy variable that takes 1 if the firm has a negative ROE and 0 otherwise; dual-listed stocks is a dummy variable that takes 1 if the firm's stocks are dual-listed and 0 otherwise; tradeable bonds is a dummy variable that takes 1 if the firm has traded bonds and 0 otherwise; Q is an approximation of Tobin's Q, which is calculated as the market value of equity and book value of liabilities divided by the book values of equity and liabilities; and IRI is the industry regulation index. A firm's industry is reflected by a set of dummy variables for each TASE industry, with manufacturing as the baseline industry. Errors are clustered within firm. Standard errors are in parentheses. *** indicates 1% significance, ** indicates 5% significance, and * indicates 10% significance.

in Section A.1 of the Appendix.

First, I manually map each regulating unit to the industry under its authority using the Regulations Handbook. Some regulators regulate a whole industry while some only regulate subindustries. For example, the unit in the Ministry of Finance that sets regulations on the quality of construction is relevant to the whole construction industry, while the unit that regulates fishing licenses is not relevant to the whole agriculture industry but only to the fishing subindustry.

After assigning each regulator to an industry (some are responsible for several industries), I attach the budget of each regulating

unit using [Nevo's \(2015\)](#) breakdown of the 2014 Israeli Budget Book and complementary sources,¹⁵ summarizing it by industry. The aggregated budget is then divided by the number of active firms in that industry. The log of this number is the final IRI, which I attach to each firm using the firm's industry classification.¹⁶

The advantage of this measure of regulation over others is that it is based not on the number of regulations but rather on the resources invested in regulation. Using the budget that the state allocates to the production of regulation more accurately reflects the real regulatory burden imposed on firms. However, since some of the regulating units not only set regulations but also monitor compliance, the index is a biased measure of regulation and is more precisely both a regulation and compliance index. I see this alleged bias as an advantage for the purposes of my research since firms might be motivated to employ former civil servants to help them cope – not only with regulations that limit their business conduct in some way but also with the duties of compliance. For example, banks may employ a former banking regulator to help them obtain an enhanced understanding of capital requirements, and also to help them more efficiently prepare for the on-site inspections regularly conducted by regulators.

The final dataset includes all directors and high-ranking executives of over 450 publicly listed firms in Israel between 2007 and 2015. The cutoff for a firm to enter the data is that, at some point of the sample period, it had a market value of at least 100 million NIS (approx. US\$28.5 million). In total, I cover the market value of over 95% of all TASE-traded public firms each year as well as approximately two-thirds of the number of publicly listed firms. The dataset consists of 3552 observations at the firm-year level and 47,390 observations at the manager–firm-year level. In my dataset, 4261 out of 47,390 managers (9%) during 2007–2015 have civil service experience. Out of these 4261 FCS managers, I find that 3554 are senior FCSs. At the firm level, out of 3552 firm-year observations, 2130 (60%) have at least one FCS manager. These figures are stable over the sample period.

For the analyses in this study, I create two samples from the full database: From the 3552 firm-level observations, I take 3307 with publicly traded stocks (and exclude firms with only traded bonds), which I use in Section 4 to characterize firms that employ an FCS. From the 47,390 manager–firm-year level observations, I take the managers who are appointed to their position during the sample period. In Section 5, I elaborate on the way I construct this sample and use it to estimate the effect of FCSs on a firm's value.

The sample period that I use is mainly dictated by available data. The two main economic events during these years were the global financial crisis and the enactment of the Anti-Concentration Law, which was aimed at reducing the size of large business groups organized in a pyramidal holding structure. While the first had a limited effect on the Israeli capital market and economy, the latter induced change in the ownership of many of the firms in my sample. However, these changes do not affect the following results.

It is also crucial to mention the legal framework that regulates public–private transitions in Israel. Article 4 of the Civil Service Act (Restrictions after Retirement) 5729–1969 imposes a 1-year¹⁷ cooling-off period on a civil servant who intends to work for (or receive any other benefits from) someone formerly under their authority while they were in the civil service.¹⁸ Also vital to mention is that this article, nor any other article in the Act, does not distinguish between a high-, mid-, or low-level civil servant. During the cooling-off period, an FCS is not allowed to have any informal contact with their future employer. A special committee, headed by a district court judge, has a mandate to shorten the cooling-off period if the FCS and the potential employer can demonstrate that contact between them will not create a conflict of interest.¹⁹ In practice, most of the requests are approved. For example, [Shapira \(2019\)](#) reviews 268 decisions of district courts in which FCSs have asked for a shortening of the cooling-off period and finds that in 258 of them, the court agreed to the request.

3. Empirical strategy

In this section I present the empirical strategy I use in the paper. First, I present how I calculate stock prices' abnormal returns, then I present the fixed effect estimator I use to estimate FCSs' effect on firm value.

I use an event-study methodology to estimate the effect of FCSs on a firm's value. Specifically, I observe differences in these outcomes immediately after the official notice by the appointing firm to the TASE about and appointment of a new board member or top executive (hereinafter “managers”²⁰), conditional on their background – that is, whether they are an FCS. Event studies have several advantages over alternative approaches for estimating the value of employing an FCS. The main one is that effects on stock prices are immediate, which makes the causal interpretation more plausible. In addition, stock price reactions are a comprehensive measure of the value of political connections.

At the heart of every event-study setting lies the assumption that the appointment is surprising and not anticipated by the markets.

¹⁵ If the regulator is not governmental but an independent entity, such as the banking regulator, I use other sources to estimate that unit's budget. For more details, see Section A.1 of the Appendix.

¹⁶ As an alternative, I divide the aggregated budget by the number of employees in each industry. All results are robust to this alternative.

¹⁷ In the Israel Securities Authority (ISA), the cooling-off period is only 3 months.

¹⁸ The FCS can apply for compensation during this period, and the State customarily provides them with partial compensation. The ISA, on the other hand, fully compensates its former workers who are “cooling off.”

¹⁹ For a further review of issues regarding the transition from the civil service to the private sector, see the Knesset's Legal Bureau Survey by Nave (2013), available at: <http://main.knesset.gov.il/Activity/Info/LegalDepartmentSurveys/Survey040413.pdf> (in Hebrew, last retrieved: 06/13/2023).

²⁰ Although the roles of board members and executives are different, I consider them the same throughout this paper in the sense that a firm can use the unique benefits of having an FCS by either having them on board or as a top-executive. These benefits might also be used by employing them in another, lower position; however, I do not have data on firms' non-top-executive employees.

Although I am unable to know for certain whether this is indeed the case in each appointment, this threat to the identification strategy implies that I might underestimate the real effect of FCS appointment. Furthermore, even if rumors are spread regarding the identity of the new manager, they are still rumors that merely give probability for the occurrence of this appointment. When an official announcement is made, all uncertainties are solved, which should be reflected in market prices (Goldman et al., 2009).

3.1. Abnormal equity returns

For each new manager's firm, I estimate the cumulative abnormal returns of its stock price in a time window close to the date of the new manager's appointment, τ , using two stages. In the first stage, I purge market effects on stock prices by regressing each stock excess return on the local market index excess return and an international one using an estimation window of 1 year of returns: $[\tau-280, \tau-30]$ (MacKinlay, 1997). Following Acemoglu et al. (2018), I include an international market index because the small and open Israeli market is heavily dependent on international markets.

Technically, I estimate the following:

$$\bar{R}_{i,t} = \alpha_i + \beta_{i,m}\bar{R}_{m,t} + \beta_{i,g}\bar{R}_{g,t} + \varepsilon_{i,t}, \quad (1)$$

where $\bar{R}_{i,t} = R_{i,t} - R_{f,t}$ is the excess return of an individual stock i on date t over the return of a risk-free asset f . In local terms, the 12-month Bank of Israel's MAKAM (the Israeli T-Bill equivalent, issued by the Central Bank) is considered a risk-free alternative investment, and one that all risky investments are compared against. Furthermore, I use its daily returns, where $\bar{R}_{m,t}$ is the excess return of the TA125 index over the risk-free asset on date t ; $\bar{R}_{g,t}$ is the excess return of MSCI World over the risk-free asset f on date t ; and $\varepsilon_{i,t}$ is a random error of stock i on date t . Using the coefficients from each regression, I calculate the cumulative abnormal returns (CAR) of each stock in a time window of $[t-l, t+n]$, where l is the number of days before the date of appointment t and n is the number of days after it:

$$CAR_{i,t-l,t+n} = \sum_{-l}^n (\bar{R}_{i,t-l,t+n} - \hat{\alpha}_i - \hat{\beta}_{i,m}\bar{R}_{m,t-l,t+n} - \hat{\beta}_{i,g}\bar{R}_{g,t-l,t+n}). \quad (2)$$

For each window, I filter out the 1st and 99th percentiles of the CAR. Because some of the stocks are not traded daily, which might affect the CAR's calculation due to liquidity considerations, I filter out stocks for which the number of days on which they are traded in the 250-day estimation window is in the lowest 5th percentile. To account for event-induced variance changes, I standardize the CAR by subtracting the cross-section mean CAR and dividing it by the standard deviation (Luechinger and Moser, 2014).

In the second stage, I use the CAR as the outcome variable, for which I estimate the effect of an FCS on a firm's outcomes as follows:

$$CAR_{i,t-l,t+n} = \gamma_0 + \gamma_1 FCS_{j,t} + \gamma_2 \omega_{i,t} + \gamma_3 \varphi_{j,t} + \varepsilon_{i,t}. \quad (3)$$

Day t is the day appointing firm i officially reported to the TASE about the appointment of top executive or board member j ; $FCS_{i,j,t}$ takes a value of 1 if the appointed manager has any experience in the civil service, and 0 otherwise; $\omega_{i,t}$ includes the firm's control variables at time t , and $\varphi_{j,t}$ includes manager j 's variables at time t . This setting is the same as those found in previous studies (e.g., Goldman et al., 2009; Luechinger and Moser, 2014; Lehrer, 2018).

Notably, I depart from this literature by adding a dummy variable, *Senior FCS*, to control for different ranks of the FCS. This variable takes a value of 1 if the appointed FCS held a high-ranking or senior-level position in their civil service institution, and 0 otherwise.²¹ For clarity, a working-level FCS is coded as $[FCS = 1, Senior\ FCS = 0]$, while a high-ranking or senior-level FCS is coded as $[FCS = 1, Senior\ FCS = 1]$. Then, I estimate the following:

$$CAR_{i,t-l,t+n} = \gamma_0 + \gamma_1 FCS_{j,t} + \gamma_2 Senior\ FCS_{j,t} + \gamma_3 \omega_{i,t} + \gamma_4 \varphi_{j,t} + \varepsilon_{i,t}. \quad (4)$$

If political value is gained only by hiring a senior FCS, one should expect γ_1 to be nonsignificant and γ_2 to be positive and significant. However, if a firm gains political value through hiring a working level FCS as well, γ_1 would be positive and significant, while γ_2 could indicate that a senior FCS brings additional value (or not).

3.2. The fixed-effects estimator

Estimating (4) would result in an unbiased estimator only if the sorting of FCSs to a firm's top executives and board members is random with respect to the appointee's past government experience. Since this is not the case, and since the determinants that control the selection process into firms might also correlate with abnormal returns and are partly unobservable, it would be difficult to claim that estimating (4) results in an unbiased estimate. The selection process is composed from a supply side – namely the available FCSs to be hired – and a demand side – namely the characteristics of the potentially hiring firms. While controlling for any supply-side variability that governs the selection process would be difficult, I attempt to diminish, as much as possible, the concerns from the demand side by adding a fixed effect for each firm-year. Technically, I augment (3) and (4) by adding a fixed effect for each firm-year. Given that all firm characteristics are year-specific, I replace the observable variables included in $\omega_{i,t}$ with a fixed term for each firm-

²¹ For a complete mapping of ranks in different civil service institutions, please refer to Section 3 and Table A1 in the Appendix.

year, $\mu_{i,t}$, and estimate the following:

$$CAR_{i,t-t+n} = \gamma_0 + \gamma_1 FCS_{j,t} + \gamma_2 Senior FCS_{j,t} + \gamma_3 \phi_{j,t} + \mu_{i,t} + \varepsilon_{i,t} \quad (5)$$

The fixed-effects estimator mitigates any concern regarding selection bias by removing specific firm characteristics, observable and unobservable or time variant and invariant, including variables that are likely to determine the appointment of an FCS. In this setting, it is most likely that the variability in the appointee's characteristics – and most interestingly in different dimensions of their government experience – drives the variability in abnormal returns.

4. Characteristics of connected firms

In this section I use firm-level data to characterize firms with at least one FCS as a board member or top executive. In the absence of a clear identification, I refer to the results not as causations but rather as correlations. Using a logit model, I estimate the following:

$$\Pr(\text{connected}_{i,t} = 1) = \alpha + \beta \text{Firm Characteristics}_{i,t} + \text{Industry_dummy}_i + \text{Year_dummy} + \varepsilon_{i,t}. \quad (6)$$

Here, $\text{connected}_{i,t}$ is a dependent variable that takes a value of 1 if at least one of firm i 's board members or top executives is an FCS, and 0 otherwise. In *Firm Characteristics*, I include the following variables: log of total assets; leverage, calculated by the share of liabilities in total assets; annual return on equity (ROE), which takes only positive values and is winsorized at the 95th percentile; a dummy variable that takes a value of 1 if the firm has a negative ROE, and 0 otherwise; a dummy variable that takes a value of 1 if the firm is dual-listed, and 0 otherwise; and a dummy variable that takes a value of 1 if the firm has traded bonds, and 0 otherwise. I also include an approximation of Tobin's Q, which I calculate as the market value of equity and the book value of liabilities divided by the book values of equity and liabilities. The firm's industry is reflected in a set of dummy variables for each TASE industry (with manufacturing as the baseline industry). Furthermore, ε is the error term, clustered within firm. For estimation, I use 3307 firm-years with publicly traded stocks, and exclude private firms with tradeable bonds but no traded stocks. Descriptive statistics of the variables can be found in [Table A2](#) in the appendix

[Table 1](#) presents the estimation results. The results ([Table 1](#), Column 1) reveal that connected firms are larger and have more leverage, and moreover, their shares are less likely to be dual-listed. The first two results are in line with previous findings in the literature (e.g., [Kang and Zhang, 2018](#)) while the third one is new. I interpret this result as follows: Dual-listed firms are operating abroad to larger extent than non-dual-listed firms, and therefore, it is less important for them to have an FCS, whose value is mainly important for local-market business activity.²² As for the TASE industries' effects, I find a positive and significant effect for the commerce and service industry as well as gas and oil exploration industry. The latter result is in line with the common perception that this industry is heavily tied to the political system, and therefore, firms tend to employ FCSs. In line with my results, [Lehrer \(2018\)](#) notes the strong ties of the gas and oil exploration industry with the political system and finds positive abnormal returns for it following the 2015 Israeli elections.

In Column 2, I replace the set of TASE industries dummy variables with the IRI. This continuous measure of regulatory burden is positively correlated with the presence of an FCS, although the effect is nonsignificant at standard levels. Since the IRI and the TASE industries only partly overlap, I can include both of them and identify their effect (Column 3). In this specification, the IRI effect is significant ($p < 10\%$) and the other coefficients are similar to those in the previous two columns. To mitigate – at least partly – the concerns for reverse causality, by which, for example, FCSs are those who bring benefits to firms in terms of growth rate which affect firms' size and other characteristics, I estimate another specification in which the independent variables are taken at their values at $t-1$ (Column 4). Results remain unchanged.

Since larger firms usually have larger boards or more top executives, the strong link between size and connections might be a technical result. This is because firms have more opportunities to hire FCSs. To more accurately identify the effect of size, I limit the sample to include only firms with a number of top executives and board members that lies in the second and third quartiles of the distribution of this number (nominally between 10 and 16 board members and top executives). Then, using this subsample, I re-estimate Equation (6). The results ([Table 1](#), Column 5) reveal that the size effect (and also the other coefficients) is still strong and in the same magnitude as in Columns 1–3.

To further understand the allocation of FCSs across firms, and particularly the effect of the regulatory burden, I estimate the intensive margin using a model in which the dependent variable is the number of FCSs on a firm's board or in its top management, while the independent variables are the same as in the previous estimation.²³ The model is estimated using ordinary least squares and the results are presented in [Table 1](#), Column 6. Besides size and leverage, a firm's growth opportunities (measured by Q) are now found to positively affect the number of FCSs hired by the firm; however, most interesting is the effect of the IRI: It appears that this continuous measure better explains the intensive rather than the extensive margin, as estimated in Column 3. In other words, firms with a higher regulatory burden not only tend to hire an FCS but they also attempt to hire more FCSs than firms with a lower regulatory

²² This does not necessarily mean that there are no FCSs with specific civil service experience that might provide value to this type of firms, such as former diplomats.

²³ Since the number of potential FCSs is left censored at zero, I estimate the model using Tobit regression as a robustness test. The results are qualitatively the same.

Table 2
Probability of employing a former regulator: Regression results.

	(1)	(2)	(3)	(4)
Dependent variable: at least one former regulator on firm's board or in top management (dummy, estimated using logit)				
Control group: firms with no FCS		Control group: firms with no former regulator		
Log (assets)	0.53*** (0.13)	0.65*** (0.11)	0.56*** (0.15)	0.24** (0.10)
Leverage	0.07 (0.05)	0.11** (0.05)	0.12* (0.07)	0.01 (0.01)
ROE	0.001 (0.01)	0.001 (0.01)	0.001 (0.01)	0.01 (0.01)
Negative ROE (dummy)	-0.06 (0.30)	-0.08 (0.30)	-0.13 (0.30)	-0.08 (0.27)
Q	0.29 (0.26)	0.22 (0.34)	0.18 (0.37)	0.02 (0.26)
Dual-listed stocks (dummy)	-0.01 (0.58)	-0.98 (0.65)	-1.05 (0.74)	-0.19 (0.56)
Tradeable bonds (dummy)	0.17 (0.36)	0.20 (0.35)	-0.13 (0.39)	0.11 (0.35)
IRI		0.59*** (0.13)	0.74*** (0.12)	0.58*** (0.08)
<i>TASE industries (dummies):</i>				
Biomed	-0.42 (1.11)		0.05 (1.28)	0.32 (1.15)
Technology	0.14 (0.44)		0.31 (0.48)	0.90** (0.42)
Banks	0.7 (1.08)		-0.52 (1.38)	-1.43 (1.00)
Insurance	1.65* (0.85)		2.54*** (0.90)	3.03*** (0.70)
Commerce	0.35 (0.46)		1.58*** (0.59)	1.29*** (0.46)
Real estate	0.03 (0.48)		1.19** (0.48)	1.54*** (0.46)
Holdings	-0.49 (0.56)		-0.45 (1.15)	-0.73 (0.86)
Gas and oil	0.96 (1.10)		0.48 (0.77)	-1.09 (1.38)
Constant	-8.95*** (1.81)	-12.21*** (1.82)	-12.07*** (2.13)	-8.16*** (1.49)
Year dummies	Yes	Yes	Yes	Yes
McFadden's R-square	0.19	0.31	0.35	0.25
Cox and Snell's R-square	0.19	0.28	0.32	0.16
Observations	1691	1691	1691	3307

This table presents an estimation of determinants of former regulator presence. Log (assets) is the natural log of total assets; leverage is calculated by the share of liabilities in total assets; ROE is the annual return on equity, which takes only positive values and is winsorized at the 95th percentile; negative ROE is a dummy variable that takes 1 if the firm has negative ROE and 0 otherwise; dual-listed stocks is a dummy variable that takes 1 if the firm's stocks are dual-listed and 0 otherwise; tradeable bonds is a dummy variable that takes 1 if the firm has traded bonds and 0 otherwise; Q is an approximation of Tobin's Q, which is calculated as the market value of equity and book value of liabilities divided by the book values of equity and liabilities; and IRI is the industry regulation index. A firm's industry is reflected by a set of dummy variables for each TASE industry. The financial services industry is omitted because of multicollinearity. In Columns 1–3, I use firms with no FCS at all as the control group. In Column 4, I use firms with no former regulator as the control group. Errors are clustered within firm. Standard errors are in parentheses. *** indicates 1% significance, ** indicates 5% significance, and * indicates 10% significance.

burden, *ceteris paribus*.

Next, I test the determinants of a firm that hires a former regulator as a board member or top executive. To do so, I limit my sample to include only firms with at least one FCS with experience in one of the firm's regulating institutions (former regulator) and is now employed as a board member or top executive. As a control group, I use firms with no FCS at all.

In the first specification, I use again only the set of TASE industries as reflecting firm's industry (Table 2, Column 1). Results show

that former regulators have more presence in bigger firms, and in insurance firms. Replacing the set of industry dummy variables with the IRI shows (Column 2) that the magnitude of the IRI's effect is substantially greater, as is its statistical significance compared to its estimate presented in Table 1. This implies that firms that face a high regulatory burden are more likely not only to hire an FCS (as suggested by the results in Table 1) but also specifically to hire an FCS with experience in one of its regulating institutions. This result holds, and the estimate even increases, when I include both the IRI and the set of industry dummy variables (Table 2, Column 3). In this specification I also find that some industries (commerce and services, insurance, and real estate) are more likely to hire a former regulator than others. Surprisingly, although gas and oil firms are more likely to hire an FCS, they do not necessarily hire a former regulator. This implies that these firms require other types of human capital gained in the civil service (e.g., connections), and not necessarily a former experience in a regulating institution. The effects of regulatory burden and industry are also evident when I compare the likelihood of hiring a former regulator among the sample of firms without an FCS or with an FCS who is not a former regulator as the control group (Table 2, Column 4). While the size and leverage do not differ between connected firms that do or do not employ a former regulator, they do differ in the level of regulatory burden and industry composition.

5. Effect of an FCS on a Firm's value

In this section I present the new appointments sample I use to estimate the effect of FCSs on firm value. Then, I estimate the models presented in Section 3 and other specifications to answer the research questions presented in the Introduction.

5.1. New appointments sample

For estimating the effect of FCSs on firms' value in an event-study framework, I use the sample of new appointments of directors and top executives.

From the manager-firm-year database, as described in Section 2, I extract all directors and top executives that their appointing firm gave notice to the TASE about their appointment between January 1st 2007 and December 31st 2015 and for which this date is well identified. After filtering out some outliers, as described in Section 3.1, 4,524 observations of new appointments remain, of which 420 are of FCSs and 4104 are of non-FCSs.²⁴ For each appointment in my data, I calculate the CAR within several windows. According to a survey reported by Luechinger and Moser (2020), the $[-1,1]$ window is the most popular in studies that estimate the effect of former public officials' appointments (e.g., see Houston and Ferris, 2015; Shivdasani and Yermack, 1999; Rossi and Cebula, 2015; Kang and Zhang, 2018). Including the day before the announcement addresses the possibility that, at this point in time, the appointment might already be anticipated by some market participants. Following this consideration as well as the common practice in the literature, I focus on this window and define day 0 as the day on which the firm officially reports its decision to hire the board member or top executive. I address other CAR windows in Section 6.

I start by presenting the mean and standard errors of the CAR $[-1,1]$ (Table 3). The mean CAR of all 4524 appointments is 0.15 and is significantly different from zero. Moreover, the CAR is significantly different conditional on the appointee's civil service background: while an appointment of a non-FCS (4104 observations) yields a CAR of 0.13, an appointment of an FCS (420 appointments of either a working-level or senior FCS) yields a significantly higher CAR of 0.32, on average. However, while the mean CAR associated with the appointment of a working-level FCS (86 observations) is slightly higher than the CAR associated with a senior FCS (334 observations), it is not significantly different. This result is below the range of previous estimates of cumulative abnormal returns following the appointment of former public officials, which lies between 0.65 and 1.06 (Luechinger and Moser, 2020).²⁵ The differences might stem, *inter alia*, from the scope of public officials included in my study, the selection process governing the assignment, appointment's predictability and more.

I provide another piece of evidence in Fig. 1, which presents a rolling 3-day window CAR, starting 5 days before the day of appointment ($t = 0$) and ending 5 days after it,²⁶ for non-FCSs and FCSs, and for working-level FCSs and senior FCSs separately. Before the appointment, the trends of the different groups' CAR are not consistent, but after the appointment, a clear positive trend in the CAR exists in a case of FCS appointments.²⁷

In order to estimate Equation 5, I include the following manager-level variables: manager's age, highest academic degree, and gender, as well as the position they were appointed to (e.g., director or CEO). Since I use firm-year fixed effects, I do not include any firm-level variables as these are fixed for each firm and year. However, I do include an interaction between the IRI and FCS to control for the possibility that the value of FCS is differential with respect to the level of regulatory burden imposed on a firm (Kang and Zhang, 2018). Descriptive statistics for these variables are provided in lower panel of Table 4. Besides the differences in the

²⁴ It is important to note that the observations filtered out because of insufficient liquidity or extreme values are not selective on the presence of an FCS: Out of 915 filtered observations, 98 observations (10.7%) are of an FCS appointment. This is just slightly higher than the FCS appointment ratio in the final sample. This ensures that the following results are not driven by a selective sample that does not include a smaller effect of appointments (or none), which is associated with the civil service history of the appointee. I thank an anonymous referee for this comment.

²⁵ Most of these studies have used 1-, 2-, or 3-day CAR windows. Specifically, Houston and Ferris (2015) use a $[-1,1]$ window and estimate the effect to be 0.65%.

²⁶ Since the CAR $[-1,1]$ is my main interest, I normalize it to the CAR value at day $t-2$.

²⁷ Although few days after the appointment there is some kind of correction, the overall effect is still positive. Longer CAR windows are discussed in Section 6.

Table 3
Cumulative abnormal returns for the full sample of new appointments.

		Number of observations	Average CAR[-1,1] %
(1)	All appointments	4524	0.15 [0.027]***
	<i>of which:</i>		
(2)	All Non-FCSs' appointments	4104	0.13 [0.028]***
(3)	All FCSs' appointments	420	0.32 [0.094]**
	<i>of which:</i>		
(4)	Working-level FCSs' appointments	86	0.37 [0.189]*
(5)	Senior FCSs' appointments	334	0.31 [0.107]**
	t-statistic for $H_0: (3)-(2) = 0$		2.01
	t-statistic for $H_0: (4)-(5) = 0$		0.26

This table presents descriptive statistics of the CAR[-1,1] in the sample of new appointments. Standard errors are in parentheses. *** indicates 1% significance, ** indicates 5% significance, and * indicates 10% significance.

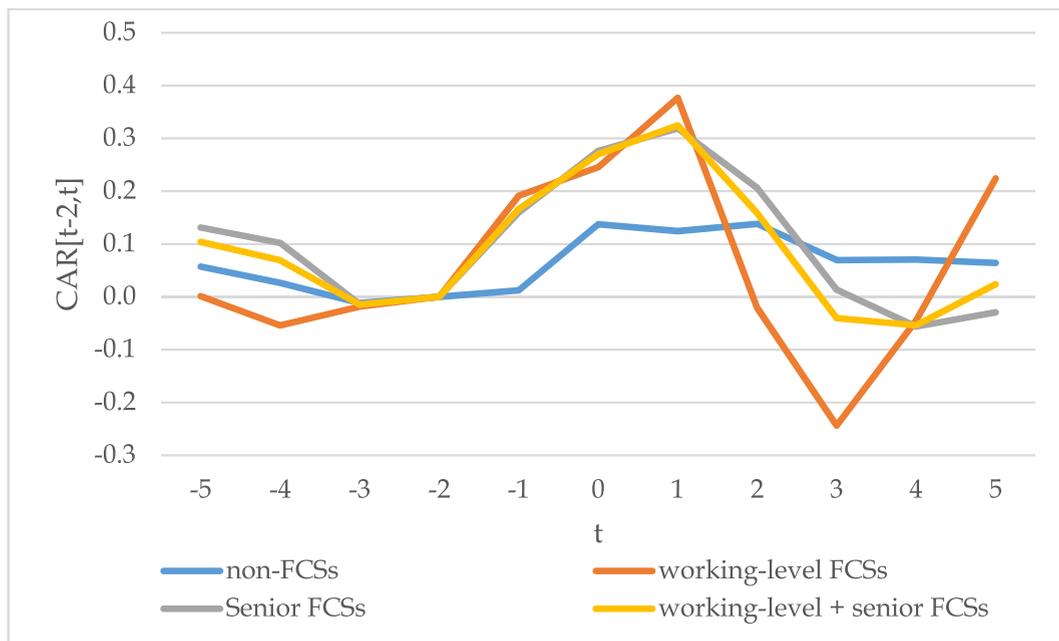


Fig. 1. CAR before and after appointment, by civil service experience. This figure presents the average CAR $[t-2,t]$ in the 5 days before and after an appointment according to the civil service experience and rank of the appointee; $t = 0$ is the day of the appointment. The CAR is normalized to its value on day $t = -2$.

Table 4
Descriptive statistics of the full sample of appointments.

	All appointments		Non-FCSs appointments	FCSs appointments	t-statistic
	N = 4524		N = 4104	N = 420	$H_0: \text{mean}(\text{non-FCS}) - \text{mean}(\text{FCS}) = 0$
	Mean	Standard deviation	Mean	Mean	
Age	48.99	10.83	48.60	52.76	-7.53
Man (dummy)	0.78	0.41	0.78	0.80	-1.19
Highest education:					
B.A. (dummy)	0.43	0.49	0.44	0.34	3.82
M.A. (dummy)	0.45	0.50	0.44	0.56	-4.98
Ph.D (dummy)	0.05	0.22	0.05	0.08	-2.61

Table 5
Estimating FCSs' effect on a firm's value.

	(1)	(2)	(3)	(4)
FCS	0.46* (0.24)	0.76** (0.38)	0.65*** (0.22)	0.76** (0.38)
Senior FCS		-0.39 (0.39)	-0.29 (0.23)	-0.38 (0.39)
Firm's former regulator (dummy)				-0.16 (0.443)
IRI X FCS	-0.10 (0.07)	-0.10 (0.07)	-0.11** (0.04)	-0.09 (0.07)
Age	0.001 (0.004)	0.001 (0.005)	0.001 (0.003)	0.001 (0.005)
Man	-0.11 (0.10)	-0.11 (0.10)	-0.06 (0.07)	-0.10 (0.10)
B.A.	0.15 (0.15)	0.16 (0.15)	0.06 (0.11)	0.16 (0.15)
M.A.	0.22 (0.15)	0.22 (0.15)	0.12 (0.12)	0.22 (0.15)
Ph.D	0.39* (0.23)	0.38* (0.23)	0.06 (0.15)	0.38* (0.23)
IRI			0.21 (0.18)	
Constant	0.11 (0.29)	0.09 (0.29)	0.21 (1.36)	0.08 (0.29)
Firm-year FE	Yes	Yes	No	Yes
Firm FE and Year FE	No	No	Yes	No
Industry dummies	No	No	Yes	No
Firm-level controls	No	No	Yes	No
Position dummies	Yes	Yes	Yes	Yes
Adjusted R-squared	0.32	0.32	0.18	0.32
Observations	4524	4524	4524	4524
Mean (median) observations per firm-year (in Column 3: per firm)	2.3 (2)	2.3 (2)	10.5 (9)	2.3 (2)

This table presents estimates of the effect of FCS and other variables on CAR $[-1,1]$. The controls used in Column 3's specification include firm size (measured by the log of total market value), leverage, ROE, IRI, and number of board members, and also a dummy for the existence of a controlling shareholder. Errors are clustered within firm-year. Standard errors are in parentheses. *** indicates 1% significance, ** indicates 5% significance, and * indicates 10% significance.

CAR between FCS and non-FCS appointments, reported in Tables 3 and I find that appointed FCSs tend to be older and more educated.

This table presents basic descriptive statistics of the firm and manager variables in the full sample and within non-FCS and FCS separately. The last column presents *t*-test results for comparing means.

5.2. Effect of an FCS on a Firm's value

Next, I estimate the models specified in Section 3.2 and report the results in Table 5. In Column 1, I use only the FCS dummy without controlling for the level of seniority in the civil service. The coefficient of interest (*FCS*) is 0.46 and significant at the 10% level. However, when I add the dummy variable *Senior FCS* (Column 2), which controls for a higher rank of the appointed FCS, the effect of *FCS* is stronger in magnitude ($p < 5\%$): following an appointment of any type of an FCS, there is an additional positive CAR of 0.76 percent. The coefficient of *Senior FCS* implies that higher-ranking FCSs are associated with lower returns than working-level FCSs, although the effect is nonsignificant. A joint test for the significance of the two coefficients (*FCS* + *Senior FCS*) reveals that the effect is not different from zero.

The fixed-effects estimator relies on the notion that there is enough variability within the unit, which in this case is firm-year. Therefore, at the bottom of each column, I report the mean (median) number of cases for each firm-year unit. The mean (median) unit has 2.33 (2) observations, and in fact over 50% of firm-year units have two or more observations, which provides the fixed-effects estimator with sufficient within-variance for estimation.²⁸ Nevertheless, I estimate Equation (5) again but now using only firm fixed effects instead of firm-year, and I also include the firm's observable characteristics.²⁹ In this setting, results are not biased by the selection of an FCS into firms, only if unobservable characteristics associated with the presence of an FCS in the firm's top positions are time-invariant. While this is a strong assumption, using firm-level fixed effects allows for more observations – and hence variance –

²⁸ Almost half of these units' appointments are of FCSs and non-FCSs.

²⁹ These include firm size (measured by the log of total market value), leverage, ROE, IRI, and number of board members, and also a dummy for the existence of a controlling shareholder.

within each unit: Instead of a mean (median) of 2.33 (2), I now have a mean (median) of 11.4 (10) observations per unit. The estimation results are presented in Column 3. The effect of FCS is somewhat lower, again with no additional value associated with higher civil service ranks. However, the joint effect of *FCS + Senior FCS* is found to be positive and significant, which implies that there are excess returns following the appointment of a senior FCS, but they are lower than the returns following the appointment of a working-level FCS.

An interesting finding is the interaction between FCS and the regulatory burden index. The negative effect implies that the effect of an appointment on a firm's value decreases with the level of the firm's regulatory burden. This might be a result of the importance of regulatory burden in determining whether a firm will hire an FCS and, more importantly, how many FCSs it will hire, as indicated in Section 4. Higher regulatory burden implies that the appointed FCS is more likely not to be the first FCS to be hired by that firm, and therefore, their marginal value is lower, as I will soon demonstrate.³⁰

In an additional specification, I add the dummy variable that indicates whether the appointed FCS was a former regulator of the firm to test whether any additional value is associated with an appointment of a former regulator (Column 4). The results indicate that this is not the case.

I continue by addressing the question of the marginal value of an FCS, given the number of FCSs on the hiring firm's board and in its management. If civil service and political connections are valuable, one should assume that the establishment of the connection is the most valuable, and then there would be a diminishing marginal value, at least up to a certain point. I test this assumption in various ways. First, I use a subsample of 2845 appointments by firms with no political connections, that is, firms with no FCS on their board or in their top management at the time of the appointment. If a connection to the civil service is valuable, I expect to find a higher effect of an FCS appointment. The results (Table 6, Column 1) indicate that the effect is indeed higher, although it is nonsignificant ($p = 0.102$). Since using a firm-year fixed-effects estimator reduces much of the variability in this subsample, I estimate the same specification but with fixed effects for firm and year separately, and I include firm-level controls. The results (Column 2) reveal a positive and significant increase in the CAR following the appointment of the first FCS, or approximately double the effect reported in Table 5.

Alternatively, I test for diminishing marginal value using the full appointment sample and replace the FCS dummy variable with a set of dummy variables that take a value of 1 according to the number of FCSs in the firm's management, including the new appointee. For example, if the appointed manager is an FCS and, including him or her, the firm now has four FCSs, then the dummy variable *Appointed FCS is no. 4* takes a value of 1 and the other dummies take a value of 0. If the appointed manager is a non-FCS, all of these dummies take a value of 0 regardless of the number of FCSs already in the firm. Since over 95% of firms have five or fewer FCSs, I include only six dummy variables, where the last variable takes the value of 1 if at the time of appointment the firm employs six or more FCSs (including the new appointee).³¹ The results are presented in Table 6, Column 3. They indicate that the first FCS brings the highest value, followed by the second one, and no additional significant value is associated with FCS three and beyond.

I draw three main conclusions from the results obtained up to this point. First, in line with previous papers in this field (e.g., Faccio, 2006; Goldman et al., 2009; Luechinger and Moser, 2014), the present study finds that in Israel investors also perceive former civil servants as adding value to a firm – conditional on covariates, the CAR for FCSs are 0.76 percentage point higher than those for other firm appointments. Given that the median market value of the firm in the sample is approximately 302 million NIS (approx. US\$86 million), a 0.76% abnormal return implies a 2.3 million NIS (approx. US\$0.65 million) increase in the appointing firm's value.

Second, the results reveal the importance of including two characteristics of political connections – namely the rank of the FCS and the intensity of the connections. According to my estimates, firms experience a higher CAR following the appointment announcement of an FCS, regardless of their rank, with – to the least – no additional value observed following the appointment of an FCS who held a higher rank in the civil service. This result is somewhat a surprising, as one might expect that higher-ranking FCSs will be perceived as more valuable to a firm than working-level FCSs. I offer the following three explanations for this finding: First, because of their high profile, higher-ranking FCSs might be paid more, and therefore, the net increase in value in comparison with working-level FCS would be nonsignificant; second, the market's perception is that the potential value that high-ranking FCSs hold cannot be fully utilized by the appointing firm because of public scrutiny and public criticism (Cingano and Pinotti, 2013; Luechinger and Moser, 2014); and third, if a working-level FCS was picked up by a firm to be one of its top executives or board members, this suggests that this FCS would hold a unique human capital unnecessarily related to their civil service term. In this case, the effect that I observe is merely the market's reaction to the appointment of a “superstar” and not necessarily of an FCS.

In addition, I find that the contribution of FCSs to a firm's market value marginally decreases. In fact, only the first and second FCSs bring value to a firm, while no increase in market value is associated with the appointment of the third FCS or beyond. I discuss this finding in length in the discussion section (Section 7).

Now, I test for the differential effect of FCSs conditional on the length of their service and the time that has elapsed since they left the civil service. My intuition is that the longer an FCS spent in the civil service, the more informed and connected they will be, and therefore, the more value they will bring to the firm. As for the number of years since their departure from the civil service, my intuition is that the value of civil service experience decays. Regardless of the specific human capital that an FCS brings to a firm – in the form of connections, knowledge, or information, among others – it will have a decay rate. This is because former colleagues do not remain in their positions forever and work procedures and regulations change, among other reasons.

While I have data on the number of years elapsed since leaving the civil service, I have no data on the length of service. As a proxy

³⁰ Support for the claim that it is in fact some type of selection bias comes from the fact that the effect of the interaction term is nonsignificant in Columns 1 and 2, where I properly mitigate the selection bias concern using the firm-year fixed-effect, as explained in Section 3.2.

³¹ The results do not change if I set the cut-off as five or seven FCSs.

Table 6
Testing for marginal FCS effect on firm value.

	(1)	(2)	(3)
	Appointments by firms with no FCSs at time of appointment	Appointments by firms with no FCSs at time of appointment	All appointments
FCS	1.27 (0.77)	1.43*** (0.40)	
Senior FCS	-0.35 (0.76)	-0.45 (0.42)	-0.28 (0.37)
Appointed manager is FCS no. 1			0.87** (0.43)
Appointed manager is FCS no. 2			0.69* (0.38)
Appointed manager is FCS no. 3			0.44 (0.43)
Appointed manager is FCS no. 4			0.80 (0.72)
Appointed manager is FCS no. 5			0.12 (0.73)
Appointed manager is FCS no. 6 or higher			1.14 (0.80)
Constant	-0.01 (0.38)	-0.99 (1.35)	0.12 (0.30)
Firm-year FE	Yes	No	Yes
Firm FE and year FE	No	Yes	No
Firm-level controls	No	Yes	No
Industry dummies	No	Yes	No
Appointee controls	Yes	Yes	Yes
Position dummies	Yes	Yes	Yes
Adjusted R-squared	0.30	0.16	0.32
Observations	2845	2845	4524

This table presents estimates of the effect of FCS and other variables on CAR $[-1,1]$ while considering the number of FCSs already in the firm (if any at all). The estimations in Column 1 and 2 use only firms without FCSs at the time of the appointment; Column 3 reflects the number of FCSs in the firm by a set of dummy variables. Appointee controls include gender, age, and a dummy for highest academic degree. Firm-level controls include size (measured by log of total market value), leverage, ROE, IRI, number of board members, and a dummy for the existence of a controlling shareholder. Errors are clustered within firm-year. Standard errors are in parentheses. *** indicates 1% significance, ** indicates 5% significance, and * indicates 10% significance.

for the latter, I interact the FCS's age with the number of years since leaving the civil service: If the FCS is 40 years old and they left the civil service 10 years ago, they probably have much less experience than a 60-year-old who left the civil service 10 years ago.³² Based on this reasoning, I expect a negative effect of the number of years since leaving and a positive effect of the interaction, which is a proxy for the length of civil service. For the estimation, I limit the sample to include only FCSs, given that the two new variables are not relevant to non-FCSs.³³ Due to the smaller sample size and fewer concerns about sample selection, I drop firm-year fixed effects and use controls for firm characteristics.

Fig. 2 presents a histogram of the number of years elapsed since leaving the civil service for FCSs with a well-defined year of departure ($n = 401$).³⁴ As can be seen, the distribution decreases with a long right tail. The greatest mass is around the value of 0, which reflects the high presence of FCSs appointed less than a year after they left the civil service.^{35 36} To avoid outlier-driven results, I limit the sample to include only 394 FCSs with no more than 25 years elapsed since leaving the civil service.³⁷ The results are presented in Table 7.

I start by using only the variable of interest as an independent variable (Table 7, Column 1). The coefficient is negative but nonsignificant. However, splitting the sample into working-level and senior FCSs reveals that the more years that have elapsed since a working-level FCS left the civil service, the lower the perceived value they bring to the hiring firm (Column 2), while no effect is

³² An exception is FCSs who started their career in the private sector, moved to the civil service, and then returned to the private sector. This is most common among FCSs in political roles, such as Knesset members, ministers, and diplomats. However, the results are not sensitive to the exclusion of these FCSs.

³³ Houston et al. (2014) use similar measures but estimate their effect on bank credit terms using a sample that also includes non-FCSs.

³⁴ Since it includes all appointments of FCSs, there might be repeating observations given that an FCS can be appointed by more than one firm. The shape of the histogram for unique observations is the same.

³⁵ Due to legal constraints, there are very few cases of a firm appointing a serving civil servant, and they almost always involve employees of local authorities.

³⁶ This result may also reflect the ineffectiveness of cooling-off periods, as Shapira (2019) finds and was mentioned above.

³⁷ The results (available upon request) are not sensitive to the following cut-offs: the 99th percentile of the number of years elapsed since leaving the civil service (27 years), the 95th percentile (19 years), the 90th percentile (16 years), and the 75th percentile (13 years).

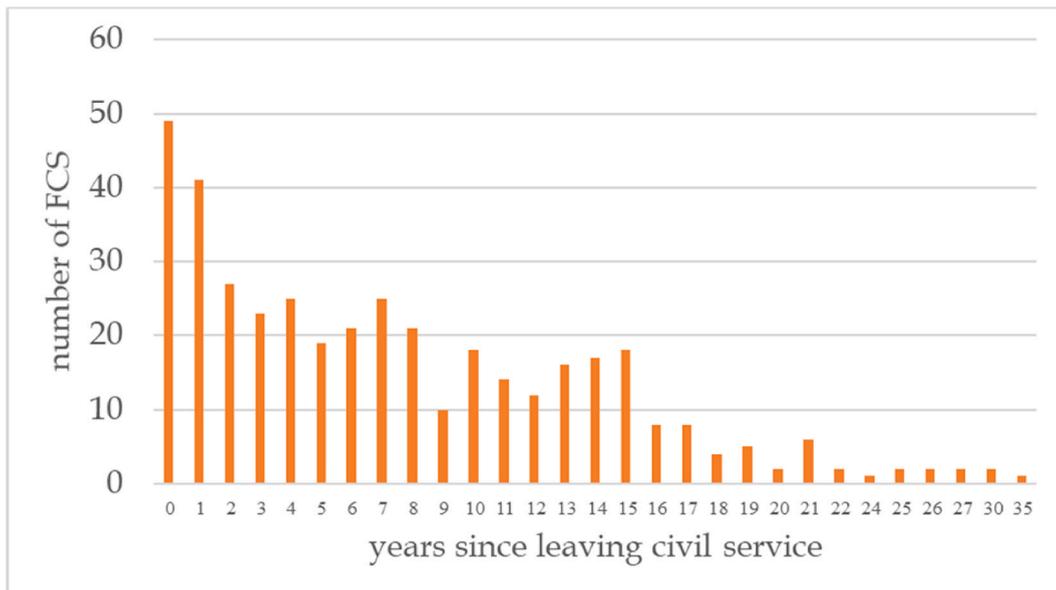


Fig. 2. Histogram of the number of years elapsed since leaving the civil service. The histogram is based on the sample of 401 appointed FCSs with a well-defined year of departure.

Table 7

Effect of FCS on firm value conditional on the number of years elapsed since leaving the civil service.

	(1)	(2)	(3)	(4)	(5)
	All FCSs appointments	Only working-level FCSs appointments	Only senior FCSs appointments	All FCSs appointments	All FCSs appointments
Years since leaving the civil service	-0.01 (0.02)	-0.04* (0.03)	-0.006 (0.02)	-0.21** (0.08)	-0.20** (0.09)
Senior FCS				-0.05 (0.26)	-0.08 (0.29)
Age × years since leaving the civil service				0.004** (0.002)	0.004** (0.002)
Age				-0.04** (0.02)	-0.03* (0.02)
Constant	0.39* (0.26)	0.78** (0.36)	0.34** (0.17)	2.36*** (0.82)	3.22** (1.39)
Firm FE	Yes	Yes	Yes	Yes	Yes
Firm-level controls	No	No	No	No	Yes
Industry dummies	No	No	No	No	Yes
Appointee controls	No	No	No	No	Yes
Position dummies	No	No	No	No	Yes
Adjusted R-squared	-0.001	0.012	-0.003	0.009	0.013
Observations	394	81	313	394	394

This table presents OLS estimates of the effect of FCS on CAR $[-1,1]$ given the number of years elapsed since they left their last position in the civil service, and an interaction between the number of years and the FCS's age, which is a proxy for the length of service in the civil service. The sample includes only FCSs for whom 25 or fewer years have elapsed since leaving the civil service. Control variables include FCS's gender and a dummy for the highest academic degree, firm size, leverage, ROE, board size and whether it has a controlling shareholder. Errors are clustered within firm. Standard errors are in parentheses. *** indicates 1% significance, ** indicates 5% significance, and * indicates 10% significance.

observed for senior FCSs (Column 3). In Column 4, I use again the full sample of FCSs and add the interaction between age and years since departure as a proxy for length of service. The effects of the two variables of interest have their expected signs, which implies a decreasing return for the “freshness” of FCSs' specific human capital and an increasing return for their length of service. Results remain unchanged after adding manager and firm level controls (Column 5).

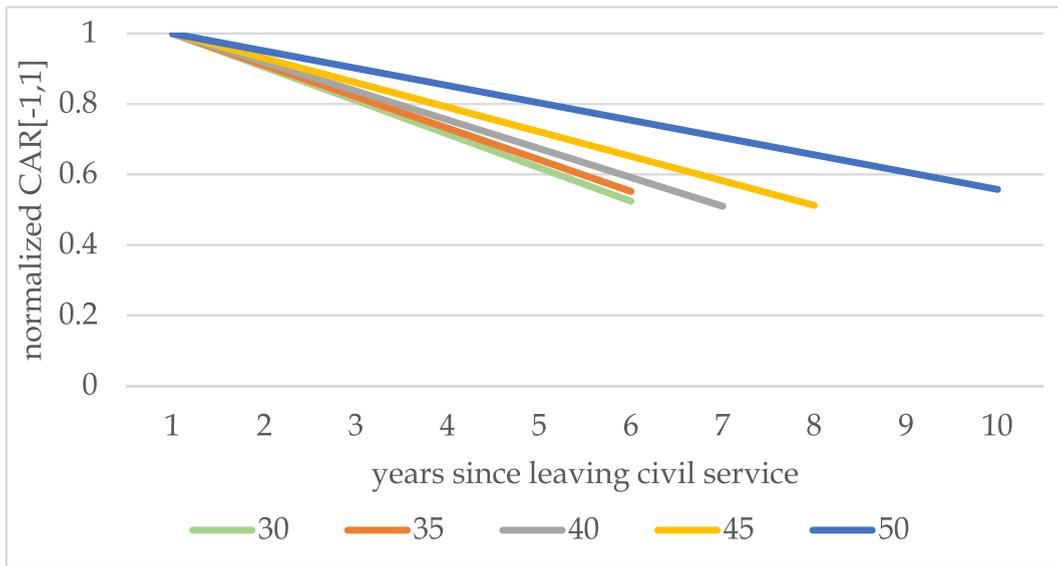


Fig. 3. CAR $[-1,1]$ conditional on the number of years elapsed since the FCS left the civil service, by age at time of appointment. This figure presents the estimated CAR $[-1,1]$ conditional on the number of years that have passed since the appointed FCS left the civil service and on their age at appointment. Estimates are based on the results presented in Table 7, Column 5. All other variables are taken at their mean values. The CAR for each age is normalized to its value at *Years since leaving the civil service* = 1. All effects are significant at the 5% level.

Fig. 3 illustrates the balance between these two related variables, where each line represents the CAR at time of appointment, conditional on the number of years elapsed and the age of the FCS at the time of their appointment.³⁸ Moving along a line represents a longer time since leaving the civil service for an FCS of a given age, while moving between lines represents a higher age of the FCS for a given number of years since leaving the civil service, which translates to a longer civil service term. This illustration indicates that when the number of years since leaving is very small, the length of the civil service term is less relevant as all lines are very close. However, if a longer time has elapsed since departure, the length of service (proxied by older age) is much more relevant, as the capital of short-term FCSs decreases faster than the capital of longer-term FCSs. These results indicate that a positive association exists between the quality (i.e., non-expiration) and quantity of FCSs' unique capital: The greater the capital that an FCS holds, the longer it persists and is valued.

The last set of tests that I conduct combine the two aspects investigated above – namely the marginal value of an FCS conditional on the number of FCSs employed by the firm at the time of appointment and their decaying value conditional on the time of departure.³⁹ I begin by presenting again (Table 8, Column 1) estimation results of the specification in Table 6, Column 3. Then, I add the number of years since leaving the civil service to this specification and use for estimation appointments of FCSs for which these data are available, while non-FCSs are used as the control group (Table 8, Column 2). The results reveal that the number of years does indeed erode the marginal value associated with the appointment, while the fact that the appointed FCS is the first or second hired by a firm remains strongly significant – both economically and statistically.⁴⁰

Next, I investigate whether the marginal value of FCSs is dependent on their freshness. I do so by estimating the model as in Column 1, using two subsamples. First, I include only appointments of FCSs for whom less than 10 years⁴¹ have elapsed since leaving the civil service, while appointments of non-FCSs are the control group. Then, I replace fresh FCS appointments with the appointment of non-fresh FCSs (and non-FCSs as a control group). I find that if the appointed FCS is “fresh,” then even the third appointed FCS adds value (Column 3), while if the appointed FCS is not “fresh,” even if they are the first appointed FCS, their appointment does not add value (Column 4). I conclude that not only do the number of FCSs and their freshness affect the appointing firm's value but also they are dependent on each other.

³⁸ The estimates are based on the results presented in Table 7, Column 5. Except for the number of years elapsed, the age of the FCS and their interaction, all other variables are taken at their means. I assume a career to start at age 25. Therefore, each line is right-censored at the number of years since departure greater than the age minus 25. The CAR for each age is normalized to its value at *Years since leaving the civil service* = 1.

³⁹ I thank an anonymous referee for suggesting this type of test.

⁴⁰ The positive and significant effect of the sixth or higher FCS's appointment might be an artifact result of very few observations that were assigned the value 1 in this dummy variable.

⁴¹ I use the cut-off of 10 years to define the “freshness” dummy following a regression in which the number of years since leaving the civil service is reflected with a set of dummy variables for each year. The negative and significant effect is only evident after the 10th year.

Table 8

Testing for the effects of marginal FCS and number of years elapsed since leaving the civil service on firm value.

	(1)	(2)	(3)	(4)
	treatment group: All FCSs appointments	treatment group: All FCSs appointments	treatment group: Appointments of FCSs with number of years since leaving ≤ 10	treatment group: Appointments of FCSs with number of years since leaving > 10
Appointed manager is	0.87**	1.24***	1.84***	-0.54
FCS no. 1	(0.43)	(0.47)	(0.55)	(0.54)
Appointed manager is	0.69*	1.00**	1.15**	0.32
FCS no. 2	(0.38)	(0.46)	(0.53)	(0.59)
Appointed manager is	0.44	0.73	1.22**	-0.64
FCS no. 3	(0.43)	(0.46)	(0.52)	(0.83)
Appointed manager is	0.80	1.20	1.31	0.32
FCS no. 4	(0.72)	(0.77)	(0.84)	(1.33)
Appointed manager is	0.12	0.39	0.79	-1.00
FCS no. 5	(0.73)	(0.80)	(0.87)	(1.36)
Appointed manager is	1.14	1.85**	1.71**	0.68
FCS no. 6 or higher	(0.80)	1.00**	1.15**	0.32
Years since left the civil service		-0.04*		
		(0.02)		
Senior FCS	-0.28	-0.40	-0.84*	0.03
	(0.37)	(0.37)	(0.51)	(0.56)
Constant	0.12	0.09	0.083	0.04
	(0.30)	(0.3)	(0.31)	(0.31)
Firm-year FE	Yes	Yes	Yes	Yes
Appointee controls	Yes	Yes	Yes	Yes
Position dummies	Yes	Yes	Yes	Yes
Adjusted R-squared	0.32	0.32	0.33	0.32
Observations	4524	4505	4383	4245

This table presents estimates of the effect of FCS and other variables on CAR $[-1,1]$ while considering the number of FCSs already in the firm (if any at all) alongside the number of years elapsed since the FCS left their last civil service position. The control group in each estimation is the set of non-FCS appointments. The set of controls is the same as in previous tables. Errors are clustered within firm-year. Standard errors are in parentheses. *** indicates 1% significance, ** indicates 5% significance, and * indicates 10% significance.

6. Additional tests and sensitivity analysis

In this section, I run a sensitivity analysis of my main results as well as report the results of additional tests. Further details and tabulated results can be found in the Appendix.

Longer CAR window (Section A.2 in the Appendix). The market's reaction as measured in a CAR $[-1,1]$ window might reflect an immediate reaction that might not last. Therefore, I also test the robustness of the main results in a $[-1,30]$ window. I find that, in general, a positive though nonsignificant effect follows an FCS appointment. However, if the FCS is the first one to be appointed by a firm, the effect is positive and significant. The effect of the years elapsed since leaving the civil service is negative, though nonsignificant.

Heterogeneous effects by industry (Section A.3 in the Appendix). Throughout the abovementioned analysis, I consider industry heterogeneity only by including industry fixed effects and adding the IRI. In this type of analysis, the effect of FCS is composed of a constant effect and a differential effect given the level of IRI of each firm. However, as TASE industries and IRI industries are not identical, and as the characteristics of an industry are not limited to the regulatory burden, there might be differential effects of FCS given the industry of the firm. From a methodological point of view, in the framework of a two-sided matching model, the value of an FCS is dependent not only on their own characteristics and on the firm's characteristics but also on the interaction between the two.

To investigate the differential value that an FCS brings to a firm, I again estimate Equation (5) but this time I add interactions between the industry and the FCS dummy variables. The results reveal that the FCS effect is present in the following industries: financial services, manufacturing, commerce and services, and gas and oil exploration. Point estimates differ from each other and range between 0.7 and 2.4; however, the differences are non-significant.

Addressing selection bias using the matching method (Section A.4 in the Appendix). Throughout the analysis, I handle the potential bias arising from the selection of FCSs into firms by using within firm-year variance with a fixed-effects estimator. Alternatively, I address the potential bias using the matching method, as in the studies of Boubakri et al. (2012), Houston et al. (2014), Hong and Kim (2017), and Kang and Zhang (2018). Using the model estimated in Section 4, I match each treatment group observation (i.e., of an appointment of an FCS to a firm) to a control group observation (i.e., of an appointment of a non-FCS to a firm) of a firm with the closest characteristics in terms of the probability of being a firm that hires an FCS. Thus, I create a matched sample with equal numbers of FCS and non-FCS appointees with balanced observable variables. The underlying assumption is that unobservable variables that explain the

selection of FCSs into firms are correlated with observable variables, and thus, by matching on observables I also eliminate the unobservable differences.⁴²

Using the matched sample, I again run all of the main tests in Section 5.2. The results reveal that the effect of FCS is positive, although marginally nonsignificant ($p = 0.13$). However, the effect of the first appointed FCS is found to be positive and significant. The results also confirm that no additional value is associated with the appointment of an FCS who held higher ranks.

Producing or redistributing value (Section A.5 in the Appendix). The value that a firm gains from hiring an FCS may either be a result of a real change in the market's perception regarding the fundamentals of the firm, or simply a redistribution of value between debt holders and shareholders (Handjinicolaou and Kalay, 1984). I address this question by testing for abnormal changes in daily-traded corporate bonds' spreads around the appointment of an FCS as a director or top executive.

Similar to the event-study methodology that I apply for equity returns, I use an event study to test for abnormal changes in the bond spreads of hiring firms. I follow the methodology suggested by Bessembinder et al. (2009) and use the fact that in Israel corporate bonds are traded on the TASE. Therefore, I have daily quotes of bond prices as well as other relevant data required to extract the yield to maturity. By subtracting the risk-free yield, given by the yield to maturity of an Israeli government bond with similar duration and indexation, I obtain the credit spread of each bond. A change in bond spread is defined as the difference between the average spread after the appointment compared with the spread prior to the appointment. An abnormal change is a change that exceeds that of a bond portfolio composed of bonds with a similar credit rating.

After calculating the abnormal change in bond spread, I use it as a dependent variable in various specifications to test whether the appointment of an FCS affects bond spread. The results reveal a negative – although nonsignificant – effect of FCS on credit spreads. This implies that, at the very least, higher perceived firm value following an appointment of an FCS is not associated with higher risk perception.

7. Discussion

This study comprehensively surveys the transition of all ranks of all civil servants and political figures into the private sector, its determinants, and its implications for a firm's value. I contribute to the growing literature on public–private sector transitions and their benefits by enriching standard analyses with further characteristics of the firm and the appointed FCS.

This paper contributes to the fruitful academic debate on politically connected firms by using the broadest definition of connections, both in the scope of government institutions included in the analysis and in the inclusion of all ranks of former civil servants. Furthermore, the variety of public–private sector interactions leads to a variety in the means through which firms attempt to gain access and connections to the public sector. This is why not only *political* connections should be documented and studied but also civil service connections. This paper also elucidates the well-known practice of hiring former government officials by comprehensively demonstrating that the practice is not limited to politicians or high-ranking civil servants but also extends to working-level civil servants.

The picture drawn by my wide range of tests contributes to the ongoing discussion among academics and policy makers regarding the origins of the value that former politicians and civil servants bring to firms. The value associated with the appointment of an FCS may stem from the perception that FCSs have stronger general human capital, which would be explained by the fact that they served in political and civil service systems and that they are better managers or board members. In this case, their civil service background is merely a signal for their qualifications,⁴³ and my results – alongside similar findings in the literature – reflect correlation and not causation. However, my additional tests are clearly not in line with this argument. If FCSs hold general human capital, one would expect to observe additional value, even if it is somewhat lower, after an FCS appointment regardless of the number of FCSs on the firm's board and management. However, my results indicate no additional value associated with FCS appointment given an FCS already on the firm's board or management. An additional clear-cut piece of evidence is that of the decreasing effect conditional on the time elapsed since the FCS left their civil service position. If their general human capital increases value, then why would it decay in accordance with the time elapsed since they left the civil service? My findings support the claim that FCSs bring a unique and specific type of capital, accumulated in their civil service term, and that it is not just a signal for their quality.

Declaration of Generative AI and AI-assisted technologies in the writing process. During the preparation of this work the author used ChatGPT in order to proofread some sections. After using this tool, the author reviewed and edited the content as needed and takes full responsibility for the content of the publication.

Declaration of competing interest

I have no conflicts of interest to disclose.

Data availability

The authors do not have permission to share data.

⁴² An underlying assumption of this procedure is that firms are independent in their decisions to hire an FCS. However, this is a highly simplified assumption as the supply of FCSs in the market affects firms' alternatives and decisions and makes firms dependent on other firms' decisions.

⁴³ Mazar (2008) finds that workers who leave the civil service for the private sector in Israel are relatively more qualified than those who do not.

Appendix

Table A.1

Detailed data description

Manager data	Description	Notes
Year		
Firm	Name and company ID	
Manager's name		
Role in firm's management	A set of dummy variables for director, chairman of board, outside director, CEO, and other type of executive	Manager can have more than one role (e.g., CEO and director)
Date of appointment	When manager has more than one role and data is available, each role's date of appointment is taken	
Birth date		
Gender	0 = female, 1 = male	
Foreign citizen	Dummy variable (1 = yes, 0 = no)	
Academic degree	0 = no academic degree, 1 = B.A., 2 = M.A., 3 = Ph.D.	
Has civil service experience?	Dummy variable (1 = yes, 0 = no)	
Civil service experience	A dummy variables for each civil service experience in one or more of the following institutions or roles: Israel Defense Force, Police, Secret Services (GSS and Mossad), Knesset member, minister, Diplomatic service, Bank of Israel, Israel Securities Authority, Antitrust, Tax Authority, Local Authorities, advisor to a civil servant and specific government offices (see table below)	Manager can have more than one civil service experience (e.g., Knesset member and IDF Chief of Staff)
Rank in her last civil service role	Three levels: head of institution, senior official and working-level official.	The last rank in civil service. "Senior FCS" includes senior officials and head of institutions, as defined below for each institution.
Type of experience former civil servant brings to the firm	A set of dummy variables for managerial experience (if she was a manager), specific experience (if she served in a related civil service institution) or economic/legal experience (if she served in an economic, financial, or legal civil service institution).	Manager can bring more than one type of experience to the firm Examples of each type: head of the Office of Construction brings managerial and specific experience to a construction firm, while former Tax Authority worker brings only economic/legal experience to this firm
Did she serve in a regulating institution?	Dummy variable (1 = yes, 0 = no)	A wider definition includes Antitrust and ISA as regulating institutions
Firm data	Description	Notes
Board size		
Market value		
Total balance		
Capital book value		
Total liabilities		
Total revenue		
Leverage	Total liabilities/Total balance	
Return on equity (ROE)		
Equity multiplier		
Dual-listed firm	Dummy variable (1 = yes, 0 = no)	
Private firm	Dummy variable (1 = yes, 0 = no)	
Controlling person	Dummy variable (1 = yes, 0 = no)	
TASE industry classification	Financial Services, Banks, Biomed, Technology, Insurance, Commerce and Services, Construction and Real Estate, Manufacturing, Investments and Holdings, Oil and Gas Exploration	
TASE sub-industry classification		
CBS industry classification	1 to 4 digits	
Total face value of traded bonds		
Average yield of traded bonds		
Average spread of traded bonds		
Average duration of traded bonds		
Average rating of traded bonds	In a numerical rank, from 1 (highest quality) to 10	Weighted average by bond market value
Civil service institutions in the database		
Civil service institution	Notes	Definition of senior rank within institution

(continued on next page)

Table A.1 (continued)

IDF (Army)	Only officers from the level of Lieutenant Colonel (<i>Sgan Aluf</i>) are considered.	Chief of General Staff (<i>Rav Aluf</i>), Major General (<i>Aluf</i>), Brigadier General (<i>Tat Aluf</i>), Colonel (<i>Aluf Mishne</i>) and Lieutenant Colonel (<i>Sgan Aluf</i>)
Police	Only officers from the level of Chief Superintendent (<i>Sgan Nitzav</i>) are considered. Also included are the top 2 ranks in the Israel Prison Service and the Israel Fire and Rescue Services	Commissioner (<i>Rav Nitzav</i>), Deputy Commissioner (<i>Nitzav</i>), Assistant Commissioner (<i>Tat Nitzav</i>), Commander (<i>Nitzav Mishne</i>) and Chief Superintendent (<i>Sgan Nitzav</i>).
GSS		The head of the GSS and its departments.
Mossad		The head of the Mossad and its departments.
Minister	A member of the government	Everyone.
Member of Knesset (MK)		Everyone.
Diplomat	An ambassador or council	Everyone.
Israel Security Authority (ISA)		The head of the ISA and its departments, deputies or heads of second-layer units.
Antitrust Authority (today known as Israel Competition Authority)		The head of the Authority and its departments, deputies or heads of second-layer units.
Bank of Israel (BoI)	Banking supervision is done by the Bank of Israel	The head of the BoI and its departments, deputies or heads of second-layer units.
Ministry of Finance		The general manager of the Ministry and its departments, deputies or heads of second-layer units.
Tax Authority	A unit of the Ministry of Finance	The head of the Authority and its departments, deputies or heads of second-layer units.
The Budget Department	A unit of the Ministry of Finance	The head of the department, deputies or heads of second-layer units.
The Capital, Insurance and Savings Department	A unit of the Ministry of Finance. In November 2016 it became an independent authority.	The head of the department, deputies or heads of second-layer units.
Ministry of Prime Minister		The general manager of the Ministry and its departments, deputies or heads of second-layer units.
Ministry of Economy		ditto.
Ministry of Interior		ditto.
Ministry of Transport		ditto.
Ministry of Communications		ditto.
Environmental Protection Ministry		ditto.
Ministry of Religious Services		ditto.
Ministry of Defense		ditto.
Ministry of Construction and Housing	Including the Israel Land Administration	ditto.
Ministry of Health		ditto.
Ministry of Agriculture and Rural Development		ditto.
Ministry of Justice		ditto.
Ministry of Energy		ditto.
Ministry of Foreign Affairs	Excluding diplomatic staff	ditto.
Ministry of Tourism		ditto.
Local Authorities	Including city councils, regional councils, local councils	The head of the Local Authority and its departments, deputies or heads of second-layer units.
Advisor	An official advisor of a high-level civil servant (e.g., Prime Minister, Minister, Head of Department, etc.)	

Table A.2

Descriptive statistics of the independent variables.

	Mean		t-statistic (<i>H0: equal means</i>)	Std. Dev.	
	without former civil servant (<i>n</i> = 1295)	with former civil servant (<i>n</i> = 2012)		without former civil servant	with former civil servant
Log (assets)	12.88	14.03	-16.48	1.72	2.11
Leverage	0.77	0.88	-0.68	1.82	5.49
ROE	10.12	10.44	-0.72	12.76	12.32
Negative ROE (dummy)	0.39	0.32	4.28	0.49	0.47
Dual-listed stocks (dummy)	0.12	0.10	1.88	0.32	0.29
Tradeable bonds (dummy)	0.41	0.49	-4.37	0.49	0.50
Q	1.34	1.25	3.82	0.72	0.62
IRI	2.15	2.60	-5.98	1.92	2.25
TASE industries (dummies): Manufacturing	0.30	0.24	3.61	0.46	0.43

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Table A.2 (continued)

	Mean		t-statistic	Std. Dev.	
	without former civil servant (n = 1295)	with former civil servant (n = 2012)	(H0: equal means)	without former civil servant	with former civil servant
Financial services	0.02	0.03	-0.48	0.15	0.16
Biomed	0.04	0.03	1.87	0.19	0.16
Technology	0.07	0.04	3.86	0.26	0.20
Banks	0.00	0.04	-6.77	0.06	0.20
Insurance	0.01	0.03	-5.25	0.07	0.18
Commerce	0.17	0.22	-3.72	0.37	0.41
Real estate	0.27	0.20	4.58	0.45	0.40
Holdings	0.11	0.14	-2.51	0.32	0.35
Gas and oil	0.005	0.02	-3.66	0.07	0.14

This table presents descriptive statistics of the independent variables used to explain the probability of a firm having an FCS on its management (*connected*). Log (assets) is the natural log of total assets; leverage is calculated by the share of liabilities in total assets; ROE is the annual return on equity, which takes only positive values and is winsorized at its 95th percentile; negative ROE is a dummy variable that takes 1 if the firm has negative ROE and 0 otherwise; dual-listed stocks is a dummy variable that takes 1 if the firm's stocks are dual-listed and 0 otherwise; tradeable bonds is a dummy variable that takes 1 if the firm has traded bonds and 0 otherwise; Q is an approximation of Tobin's Q, calculated as the market value of equity and book value of liabilities divided by the book value of equity and liabilities; and IRI is the industry regulation index. A firm's industry is represented by a set of 10 dummy variables for each TASE industry.

A.1. Constructing an industry regulation index (IRI)

The contribution of regulation to business conduct and consumer protection is indisputable. In recent years, the right quantity of regulation has been a theme of many discussions in many countries, and reducing regulatory burden has emerged as a crucial issue. However, quantifying the regulatory burden imposed on a firm is a great challenge, with no clear consensus on how it is to be done.

The most popular method constructed for the U.S. economy uses the number of pages in the Code of Federal Regulations devoted to each industry (Dawson and Seater, 2013) or the sizes of digitized versions of state-level statutes as a proxy for real state-level regulation (Mulligan and Shleifer, 2005). Coffey et al. (2012) proxy the total number of pages published annually and quarterly in the Federal Register, the United States government's daily journal of bureaucratic activity, including proposed and final regulations. Crews (2017) counts both the annual number of final regulations published in the Federal Register and the annual number of Federal Register pages devoted to final regulations. An important recent work is Al-Ubaydli and McLaughlin (2017), who use text analysis to count binding constraints in the wording of regulations, as codified in the Code of Federal Regulations, and to measure the applicability of regulatory text to different industries. The database, called RegData, quantifies the regulatory burden imposed on every industry in the U.S., and spans from 1997 to 2012.

In the absence in Israel of a report similar to the Code of Federal Regulations, I adopt an alternative method for quantifying the level of regulation in each industry.

My first source is the Governmental Book of Regulators. This is an official document written within the framework of Government Resolution no. 708, which authorizes the General Manager of the Prime Minister's Office to map the regulators in the government to their relevant industries. The Book was published in June 2015 and identifies the regulating unit in each government office and its function. For example, within the Ministry of Economy there is a unit supervising hazardous toys. According to the description, its function is to publicly announce toys it deems hazardous and to set regulations for their use.

In the first step I manually find which regulators regulate each industry, using the 1993 CBS industry classification, which classify firms by 1-, 2-, 3- and 4-digit level classification. Some of the regulators regulate a 2-digit industry, some a 3-digit industry, and some only a 4-digit industry. For example, the supervisor of diamonds is a relevant regulator for all firms whose 2-digit industry classification is 12 (diamond mining) or 37 (diamond industry) and for firms whose 4-digit industry classification is 5135 (wholesale trading in diamonds) or 5136 (diamond brokerage). An industry might be regulated by more than one regulator. For example, manufacturing of medical, scientific, or industrial equipment for control and supervision (2-digit industry classification 34) has five relevant regulators: two within the Ministry of Economy: Supervisor of Weights, Measurements, and Standards, Supervisor of the Export of Dual-Purpose (i.e., civilian and military) Equipment; two within the Ministry of Health: Directorate of Medical Technologies, Medical Device Division; and one within the Ministry of Defense: Defense Export Controls Agency.

Some of the regulators are relevant for all industries. For example, the Equal Employment Opportunity Commission, which enforces the Employment (Equal Opportunities) Law 1988-5748, does not focus on one or a few industries but rather on every industry that employs people. Another example is the Antitrust Authority. In addition, there are regulators who act as an independent authority and not a government office, such as the Bank of Israel as the banking supervisor. I include these authorities as well.

This mapping enables me to count the number of units that regulate each firm within a given industry. However, not all regulators are equal: there is only one banking regulator while there are a few regulators for small agricultural industries. Ignoring the scope of regulation can be misleading when it comes to rating the regulatory burden that is imposed on a firm. Therefore, I take the following steps in order to get some quantifiable measure of the scope of regulation of each unit.

Nevo (2015) develops a methodology for assessing the size and scope of the Israeli regulatory budget. Using Israel's State Budget Report for 2014, Nevo identifies the exact budget of each regulatory unit in each government office. To this direct regulatory cost he adds the relative cost of each unit (based on the number of workers in the unit) that serves the entire office, e.g., the cost of the technical support unit, human resources, etc. Aggregating the budget for each regulatory unit over the office and dividing it by the total office budget yields the regulatory budget of each office.

I utilize Nevo's calculation of each office's regulatory budget to assign each regulatory unit its own budget. In some cases, the regulatory unit explicitly appears in Budget Report and so its total budget is directly known. However, this is not usually the case. Therefore, I calculate the budget in the following way: using the Governmental Book of Regulators, I find for each office the number of regulating units and then divide the total regulatory budget, as calculated by Nevo, by the number of regulating units. In this way I roughly know the budget of each unit, since the total regulatory budget belongs only to these regulating units. Then, using the matching between regulatory units and industries, I calculate the sum of budget invested in all regulatory units relevant to an industry. Since industries differ from each other in size, I divide the total budget by the number of businesses in each industry. As an alternative, I divide the total budget by the number of employees in each industry instead of the number of businesses.

Some exceptions are dealt with separately, using other sources of information. For example, the Banking Supervision Division of the Bank of Israel is the banking regulator, and so I take the share of employees working in the Division and multiply it by the sum of the expenses for salaries and related functions (IT, HR, etc.). Dividing the sum by the number of regulated entities (bank and credit card companies) yields the amount of regulation imposed on firms in this industry.

The above calculations result in two regulation measures for fifty-four 2-digit industries, two 3-digit industries, and seven 4-digit industries. I match between firms and regulation measures using the most detailed level of industry. Therefore, if a firm belongs to one of the seven 4-digit industries for which I have regulation measures, these measures are attached. If not, I check whether the firm belongs to a 3-digit industry and attach these regulation measures. If not, I attach the 2-digit industry regulation measures. The natural log of the attached regulation measure is the Industry Regulation Index (IRI), while the index that divides the regulation cost by the number of employees in each industry is the employee-adjusted Industry Regulation Index (eIRI).

The advantage of these measures, as opposed to word- or page-counting, is that they are based not on the number of regulations but rather on the resources invested in regulation. Words and pages are almost free, while resources are costly. Using the budget the state allocates to produce regulation is more accurate and better reflects the real regulatory burden imposed on firms. However, since some of the regulating units not only create regulations but also monitor compliance, the index is a biased measure of regulation and is more precisely both a regulation, monitoring and compliance index. I see this alleged bias as an advantage for the purposes of my research since firms might be motivated to employ former civil servants to help them cope not only with regulations that limit in some way their conduct of business but also with the work entailed by compliance. For example, banks may employ a former banking regulator to help them better understand capital requirements, but also to help them more efficiently prepare for the on-site inspections regularly conducted by regulators.

While the IRI can be related to the regulatory burden imposed on different industries, it might also be a consequence of firms' behavior in that industry. Under this view, the index might also measure the level of corruption or misbehavior in the industry.

These measures have two shortcomings. First, the implementation of the methodology is time-consuming and so a time series of this index is hard to produce. Second, there are economies of scale in regulation and inspection: the budget needed for regulating and inspecting 100 entities is not twice as much as the budget needed for 50 entities. In the same sense, regulation can be very inexpensive for the regulatory unit to produce but very expensive for the regulated firm to bear.

The IRI of 54 industries is presented in [Figure A1](#) (dashed lines represent industries in which the number of businesses is very small) and the eIRI is presented in [Figure A2](#). In the absence of a clear benchmark by which the index results can be examined, the only measure is the common perception of the extent of regulation each industry is under. According to the IRI, the most regulated industry is the mining of ores and diamonds. However, as indicated by the dashed line, this industry includes very few firms and therefore the results can be misleading. The same goes for the next most regulated industry, the extraction of crude petroleum and natural gas. The banking industry is in third place, in line with the common perception that this industry is heavily regulated. Surprisingly, the insurance and social insurance funds industry is in the lower part of the distribution. The explanation is that although the regulatory budget is relatively high, the number of businesses is very large and so the quotient is small. In addition, every individual fund is legally listed as an independent business, while in fact most of the funds are subsidiaries of 40 big firms. Dividing the total regulatory budget by this figure instead of the official number of businesses yields a much higher index that reaches tenth place in the index, which better accords with the common perception of the extent of regulation for this industry. All the results included in the paper are not sensitive to this variation. They are also not sensitive to the replacement of the IRI with the eIRI, partly because of the high correlation between these two measures (0.74).

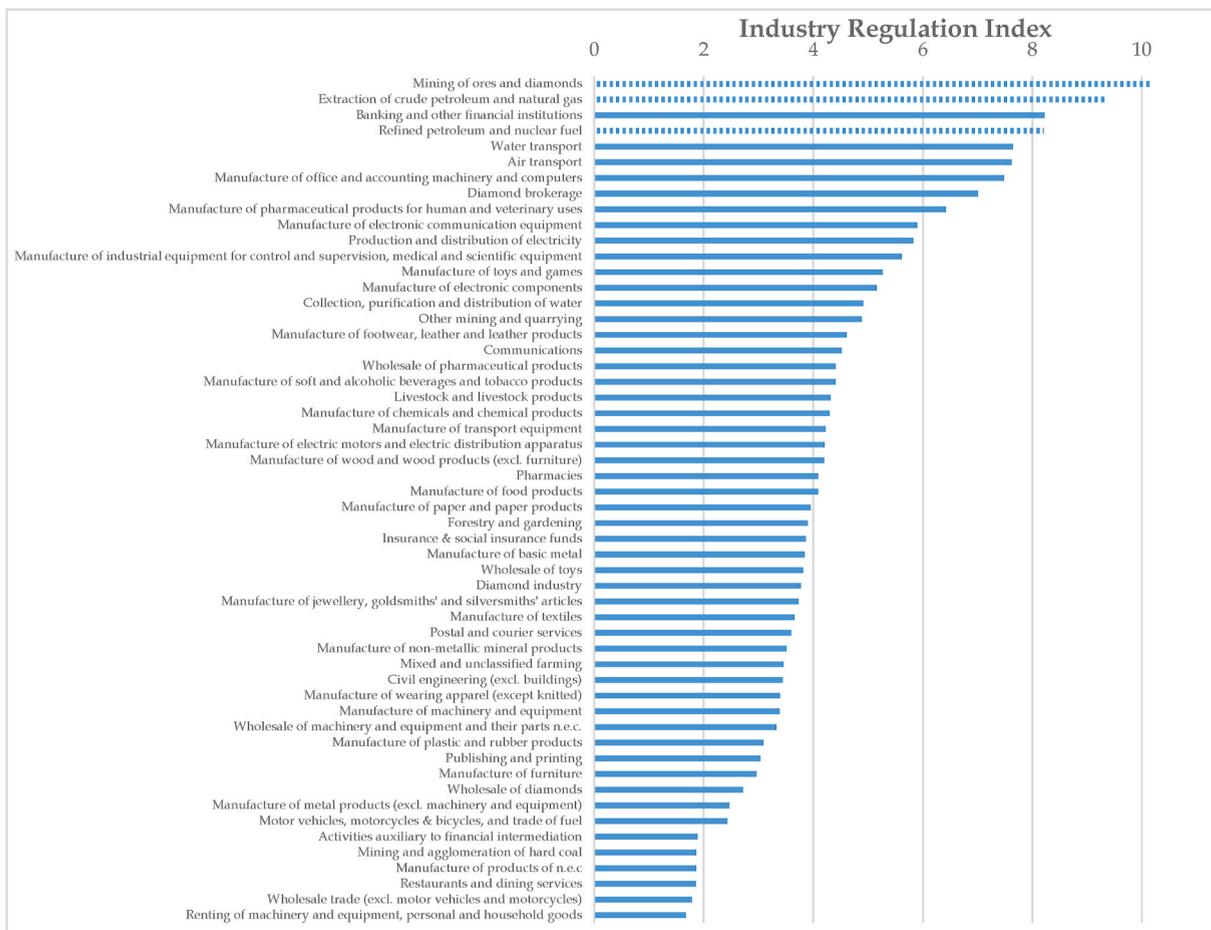


Fig. A.1. The Industry Regulation Index (IRI). This figure shows the Industry Regulation Index (IRI) of fifty-four 2-digit level CBS industries. The index is based on the regulatory units that regulate each industry, the budget allocated to these units, and the number of firms in the industry. From the total cost I take the natural log. Dashed lines indicate industries with a very small number of firms.

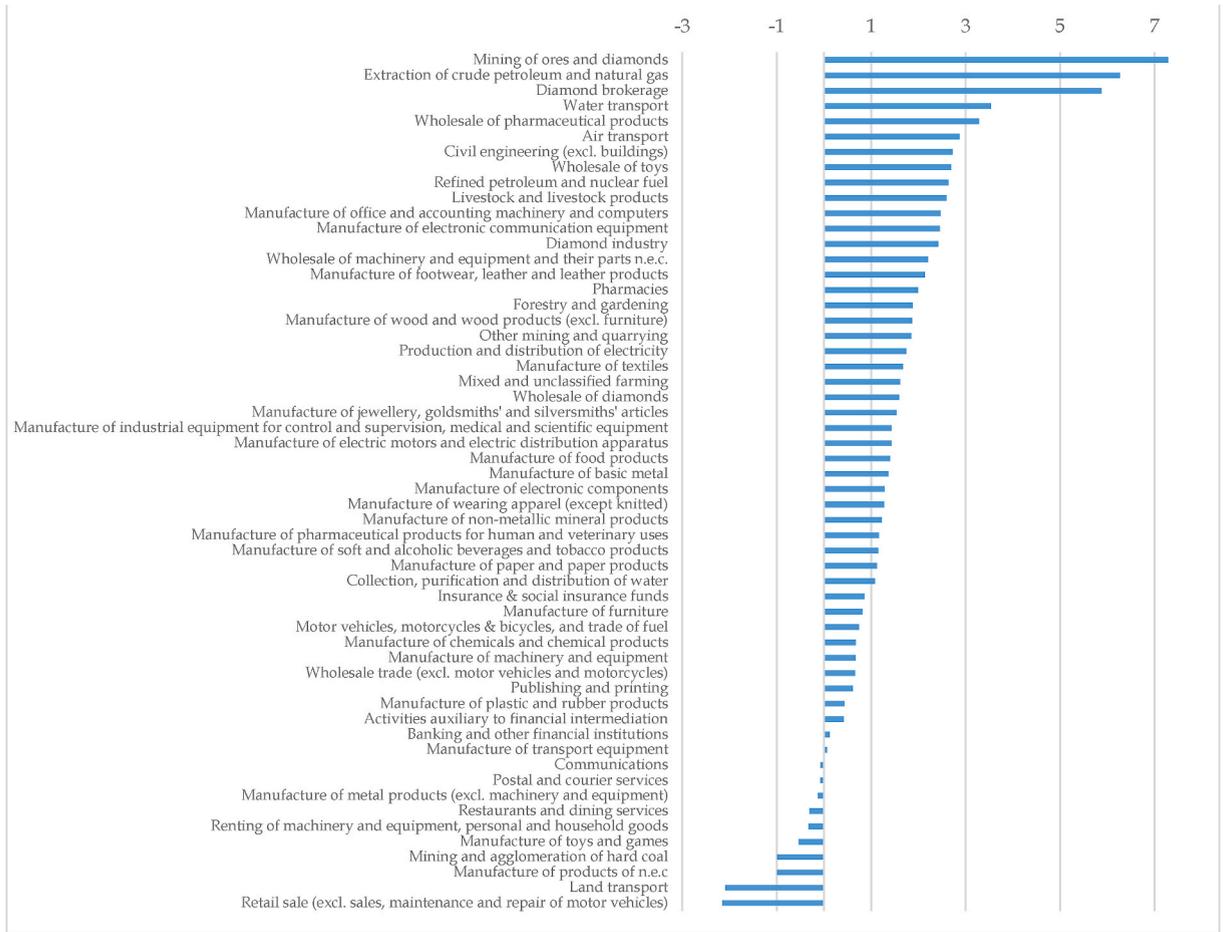


Fig. A.2. The Employee-adjusted Industry Regulation Index (eIRI). His figure shows the employee-adjusted Industry Regulation Index (eIRI) of fifty-four 2-digit level CBS industries. The index is based on the regulatory units that regulate each industry, the budget allocated to these units, and the number of employees in the industry. From the total cost, I take the natural log.

A.2. Long-term effect

Table A3 presents the results of this study’s main tests using the CAR [-1,30] as the dependent variable to investigate whether an FCS appointment has longer-term effects. The results reveal that positive and significant effects are found only following a firm’s first appointment of an FCS. The effect of the number of years elapsed since the appointed FCS left the civil service is negative but nonsignificant.

Table A.3
Testing for long-term effects of FCS appointments.

	(1)	(2)	(3)	(4)
	Full sample	Appointments by firms with no FCSs at time of appointment	Full sample	Only FCSs
FCS	1.60 (1.22)	3.66* (1.87)		
Senior FCS	-1.68 (1.21)	-0.88 (1.87)	-1.87 (1.15)	0.18 (0.88)
Is the appointed FCS the first FCS in the firm?			2.51** (1.20)	
Years since leaving the civil service				-0.03 (0.25)
Constant	0.28 (1.04)	0.19 (1.27)	0.33 (1.05)	6.98* (4.18)
Firm-year FE	Yes	Yes	Yes	No

(continued on next page)

Table A.3 (continued)

	(1)	(2)	(3)	(4)
	Full sample	Appointments by firms with no FCSs at time of appointment	Full sample	Only FCSs
Firm FE and Year FE	No	No	No	Yes
Firm controls	No	No	No	Yes
Industry dummies	No	No	No	Yes
Appointee controls	Yes	Yes	Yes	Yes
Position dummies	Yes	Yes	Yes	Yes
Adjusted R-squared	0.21	0.23	0.21	-0.01
Observations	4358	2738	4358	375

This table presents estimates of the effect of FCS and other variables on CAR $[-1,30]$. Column 1 estimates the same specification as in Table 5, Column 2; Column 2 estimates the same specification as in Table 6, Column 1; Column 3 estimates the same specification as in Table 6, Column 3; and Column 4 estimates the same specification as in Table 7, Column 4. Errors are clustered within firm-year. Standard errors are in parentheses. *** indicates 1% significance, ** indicates 5% significance, and * indicates 10% significance.

A.3. Industry-Specific Effects

To investigate the differential value that FCSs bring to a firm conditional on the industry in which it operates, I again estimate the baseline model, except this time I add interactions between the industry dummies and the FCSs' civil service characteristic. Formally, to the specification estimated in Table 5, Column 2, I add interactions of industry dummies with the FCS dummy and drop the FCS dummy without the interaction (Table A4). The results reveal that the FCS effect is present only in some industries, namely financial services, manufacturing, commerce and services, and gas and oil exploration. Point estimates differ from each other and range between 0.7 and 2.4; however, the differences are nonsignificant.

Table A.4

FCS effect on firm value by industry.

	Coefficient	SE
Financial services	2.42	(1.11) **
Banks	1.38	(0.85)
Insurance	1.14	(1.03)
Commerce and services	0.69	(0.40) *
Real estate	0.82	(0.52)
Manufacturing	1.08	(0.52)**
Investments and holdings	0.56	(0.45)
Gas and oil	1.28	(0.63)**

This table presents OLS estimates for the effect of appointed FCS on CAR $[-1,1]$, conditional on the appointing firm's industry. The presented coefficients are those of the interaction between the FCS dummy and a dummy for the firm's industry control variables, including the IRI, an interaction between the IRI and FCS, an interaction between IRI and senior FCS, FCS's gender and a dummy for highest degree, firm size, leverage, ROE, board size, and whether it has a controlling shareholder. I also include fixed effects for position and firm-year. Errors are clustered within firm. Standard errors are in parentheses. *** indicates 1% significance, ** indicates 5% significance, and * indicates 10% significance.

A.4. Estimating the Effect of FCS on Firm Value using the Matching Method

A.4.1. Constructing a Matched Sample

Throughout this paper, I use the fixed-effects estimator to overcome selection bias arising from the selection of FCSs into firms. As an alternative, I apply the matching method to construct a matched sample to be used for estimating the effect of FCSs on firm value. To do so, I estimate the probability of a firm hiring an FCS to its board or management. Based on the obtained estimates and predicted probability, I match each treatment group observation (i.e., of an appointment of an FCS to a firm) to a control group observation (i.e., of an appointment of a non-FCS to a firm) of a firm with the closest characteristics in terms of the probability of being a firm that hires an FCS. Thus, I create a matched sample with an equal number of FCS and non-FCS appointees, with balanced observable variables, and control for the probability of a firm hiring an FCS. Under the assumption that unobservable variables are correlated with observable variables, the matching procedure ensures that I compare two similar groups.

Technically, I estimate a logit model in which the dependent variable takes a value of 1 if the newly appointed manager is an FCS and 0 otherwise, conditional on the same set of independent firm-level variables that I use to characterize politically connected firms in Section 4. Then, using the probabilities obtained from the last stage, I use the nearest neighbor approach to assemble a control group. At the end of the process, I am left with a dataset with an equal number of FCS and non-FCS appointees. Assuming that a common support exists, a balanced dataset with matching observable variables should be obtained. Table A5 presents the descriptive statistics of the matched sample. The CAR $[-1,1]$ is still higher when an FCS is appointed; however, the differences are nonsignificant. All firm characteristics on which the matching process is based are balanced, while some of the manager characteristics that were not part of the matching process are still significantly different.

A.4.2. Main Results

I re-estimate the main specifications used in this paper using the sample of matched firms and present the results in Table A6. Column 1 indicates that in the baseline specification, the effect of FCS appointment is positive though nonsignificant ($p = 0.132$), with no additional effect for the seniority level of the FCS. Column 2 indicates that the effect is positive and significant when the sample used is that of matched firms with no FCS at the time of appointment. Finally, in Column 3 I add a set of dummy variables that take a value of 1 according to the number of appointed FCSs in the firm's management. The results reveal that the first appointed FCS produce additional value, while the rest (not presented) do not.

Table A.5

Descriptive statistics of the matched sample.

	All appointments		Non-FCS	FCS	t value <i>H0: equal means</i>
	N = 840		N = 420	N = 420	
	Mean	Standard deviation	Mean	Mean	
CAR [-1,1]	0.26	2.00	0.19	0.32	0.90
FCS (dummy)	0.50	0.50			
Senior FCS (dummy)	0.15	0.36			
<i>Firm characteristics</i>					
IRI	2.90	2.44	2.89	2.93	0.35
Log (firm market value)	20.29	1.76	20.27	20.31	0.31
Leverage	0.68	0.26	0.68	0.68	-0.11
ROE	10.17	12.05	9.88	10.45	0.68
Negative ROE (dummy)	0.31	0.46	0.32	0.30	-0.37
Q	1.20	0.54	1.19	1.21	0.62
Dual-listed stocks (dummy)	0.08	0.27	0.08	0.08	0.26
Tradeable bonds (dummy)	0.57	0.50	0.57	0.57	-0.07
<i>Manager characteristics</i>					
Age	51.26	11.07	49.77	52.76	3.94
Man (dummy)	0.80	0.40	0.80	0.80	0.17
<i>Highest education</i>					
B.A. (dummy)	0.38	0.49	0.42	0.34	-2.35
M.A. (dummy)	0.52	0.50	0.47	0.56	2.70
Ph.D (dummy)	0.06	0.24	0.05	0.08	1.85

This table presents basic descriptive statistics of firms and manager variables in the matched sample and within non-FCS and FCS separately. The last column presents t-test results for comparing means.

Table A.6

Estimating the FCS effect on firm value using the matched sample.

	(1)	(2)	(3)
	Matched sample	Matched sample: Appointments by firms with no FCSs at time of appointment	Matched sample
FCS	0.48 (0.35)	1.24** (0.49)	
Senior FCS	0.02 (0.38)	0.001 (0.45)	0.16 (0.35)
Appointed manager is FCS no. 1	0.48		0.65* (0.38)
Constant	2.90 (5.36)	-4.77 (3.91)	2.57 (5.30)
Firm-year FE	Yes	Yes	No
Firm FE and Year FE	Yes	Yes	Yes
Firm controls	No	No	Yes
Industry dummies	No	No	Yes
Appointee controls	Yes	Yes	Yes
Firm-year FE	Yes	Yes	Yes
Adjusted R-squared	0.30	0.06	0.30
Observations	840	213	840

This table presents estimates of the effect of FCS and other variables on CAR [-1,1] using the matched sample. Column 1 estimates the same specification as in Table 5, Column 2; Column 2 estimates the same specification as in Table 6, Column 1; and Column 3 estimates the same specification as in Table 6, Column 3. Errors are clustered within firm-year. Standard errors are in parentheses. *** indicates 1% significance, ** indicates 5% significance, and * indicates 10% significance.

A.5. FCS Effect on Credit Spreads

A.5.1. Abnormal Corporate Bond Returns

Event studies that estimate the effect of various corporate events on bond returns are outnumbered by those that focus on equity returns (Bessembinder et al., 2009). This is partly due to the fact that data on bond returns are scarcer than data on equity, and sometimes they are available only at a low frequency (e.g., monthly). In Israel, however, corporate bonds are traded on the TASE. Therefore, the daily quotes of bond prices and other relevant data required for extracting the yield to maturity are available. By subtracting the risk-free yield, given by the yield to maturity of an Israeli government bond of a similar duration and indexation, I obtain the credit spread of each bond. When there is more than one bond for a firm, I calculate the weighted average of the credit spread of all of the firm's bonds weighted by the bond's market value (Bessembinder et al., 2009). Using managers' appointment dates, from each firm's credit spread (S_i) I calculate the difference between the average spread in the n days after date τ , the time of the manager's appointment, and the average spread 30 days before τ :

$$\Delta S_{i,\tau,n} = \bar{S}_{i,\tau+n} - \bar{S}_{i,\tau-30}. \quad (A1)$$

Due to the wide heterogeneity in bonds' characteristics, Bessembinder et al. (2009) suggest cleaning common market effects by creating bond portfolios based on common characteristics, such as credit ratings. Therefore, I calculate the difference between the average spread of a bond portfolio with the same credit rating before and after date τ . For each bond (or firm's bond portfolio), I match a bond portfolio with a similar credit rating.⁴⁴ Then, I define the excess spread as the difference in differences of the firm's bond portfolio and the matched portfolio as follows:

$$\Delta S_{i,\tau,n,rating}^* = \Delta S_{i,\tau,n} - \Delta S_{rating,\tau,n}. \quad (A2)$$

Finally, I regress $\Delta S_{i,\tau,n,rating}^*$ on firm and manager attributes, of course including civil service experience, as in Equation (5) of the paper. I use the excess spread in the $[-30,1]$ window as the dependent variable, which means that I compare the difference between the credit spread 1 day after an appointment and the average credit spread in the 30 days prior to the appointment with the difference in rating-matched bond portfolios over the same period. From the sample, I filter out the highest and lowest 0.5% of $\Delta S_{i,\tau,n,rating}^*$, and for liquidity concerns I only retain bonds traded in at least 95% of trading days prior to and after appointment.

A.5.2. Main Results

I use the full sample of appointments, which is smaller than the sample used for the CAR analysis, as fewer firms have corporate bonds. Then, I estimate Equation (5) using $\Delta S_{i,\tau,n,rating}^*$ as the dependent variable. The independent variables of interest are again FCS and Senior FCS, while the set controls remain the same, with the addition of the numeric firm's credit rating. The results are presented in Table A7. In Columns 1–4, it appears that credit spreads decrease following an appointment of an FCS, although the effect is nonsignificant, even for the first FCS appointment. However, when I use only the subsample of FCSs (Column 5), I find that even if there is an effect, it weakens conditional on the time elapsed since the appointed FCS left the civil service.

Table A.7
FCS effect on credit spread.

	(1)	(2)	(3)	(4)	(5)
	Full sample	Matched sample	Appointments by firms with no FCSs at time of appointment	Full sample	Only FCSs
FCS	−0.25 (0.25)	−0.42 (0.48)	−0.17 (0.27)		
Senior FCS	0.25 (0.27)	0.39 (0.53)	0.43 (0.32)	0.19 (0.21)	0.05 (0.23)
Appointed manager is FCS no. 1				−0.24 (0.26)	
Years since leaving the civil service					0.11* (0.06)
Constant	−0.07 (0.24)	0.54 (1.07)	−0.08 (0.40)	−0.33 (0.65)	−1.91 (1.78)
Firm-year FE	Yes	Yes	Yes	Yes	No
Firm FE and year FE	No	No	No	No	Yes
Firm controls	No	No	No	No	Yes
Industry dummies	No	No	No	No	Yes
Appointee controls	Yes	Yes	Yes	Yes	Yes

(continued on next page)

⁴⁴ I match financial and nonfinancial firms separately.

Table A.7 (continued)

	(1)	(2)	(3)	(4)	(5)
	Full sample	Matched sample	Appointments by firms with no FCSs at time of appointment	Full sample	Only FCSs
Position dummies	Yes	Yes	Yes	Yes	Yes
Adjusted R-squared	0.61	0.79	0.57	0.61	-0.05
Observations	1346	331	608	1346	160

This table presents OLS estimates of the effect of FCS and other variables on the excess spread in the $[-30,1]$ window. The control variables are the same as in Table 5, Column 2, with the addition of the firm's credit rating. In Column 3, I estimate this effect using the sample of firms that had no FCS on their board or in their management prior to the appointment. Errors are clustered within firm. Standard errors are in parentheses. *** indicates 1% significance, ** indicates 5% significance, and * indicates 10% significance.

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