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The rise of transnational state capital: state-led foreign investment in the 21st century

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ABSTRACT

Cross-border state-led investment is a recently rising, but understudied phenomenon of the global political economy. Existing research employs an anecdotal and case-oriented perspective that does not engage in a systemic, large-scale analysis of this rise of transnational state investment and its consequences for the transformation of state power in 21st century capitalism. We take a first step at filling this gap and offer two original contributions: Conceptually, we operationalize transnational foreign state-led investment on the basis of weighted ownership ties. These state capital ties are created by states as investors in corporations around the world. Empirically, we demonstrate our approach by setting up and analyzing the largest dataset on transnational state capital up to date. We show which different outward strategies states as owners employ and classify states according to their relative positions within the global network of transnational state capital. Our results illustrate a crucial aspect of the ongoing transformation of state power and sovereignty within globalization and we demonstrate how a careful and data-driven approach is able to identify different pathways and dimensions of this transformation.

KEYWORDS

International political economy; globalization; state capitalism; state capital; foreign investment; transnational capitalism; corporations

1. The rise of transnational state capital

States are increasingly involved in massive transnational investment deals. Large-scale state-led investments like ChemChina's $43 billion takeover of Swiss agrochemical giant Syngenta in May 2017 or Rosneft's $13 billion takeover of India's Essar Oil in August 2017 aroused serious concerns in politics and media, as they represent landmark events in global cross-border investment. The Syngenta takeover was the largest single Chinese outward foreign direct investment (FDI) ever, the Rosneft investment represented the largest FDI transaction in India ever. Syngenta-CEO Erik Fyrwald was quick to play down the transformation of his corporation into a Chinese state-owned enterprise (SOE) when he emphasized that

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'[i]t is very important to understand that this is a financial transaction'. At the same time, he acknowledged that a main strategic motive behind the state takeover is to bring Chinese agriculture up-to-date with global standards (Shields, 2017). In India, the Home Security and Intelligence Agencies raised security concerns about the geopolitical impacts of the Rosneft deal and red-flagged it (The Asian Age, 2017). These cases illustrate how state-led foreign investment is more than just a normal FDI transaction. It may and often does cause insecurity and political concerns. Especially when authoritarian regimes engage in outward economic expansion through FDI, geopolitical implications are not far. And the mentioned cases are no exception: in the last years, we saw a rapid rise in the number and global activities of sovereign wealth funds (SWFs) (Schwartz, 2012), SOEs (Kwiatowski & Augustynowicz, 2015) and other forms of state investment in the global economy (Karolyi & Liao, 2017).

These types of state-led foreign investments challenge traditional ideas of sovereignty and state power in 21st century capitalism (Dixon & Monk, 2011). Yet we know astoundingly little about this phenomenon. Previous work is mostly oriented toward SOEs in a domestic context, or toward firm-level characteristics of those SOEs (such as profitability). The little work on *transnational* state investment has been approached from an anecdotal and case-oriented perspective. While this revealed important piecemeal insights, it does not contribute to a thorough and encompassing understanding of the economic reach of states into today's global political economy: we remain almost clueless about the general patterns of state-led foreign investment; the different strategies that states employ in these matters; and the wider implications of the rise of states as global investors. Our goal is to fill this gap by providing a distinct conceptual framework that forms the basis for an informed, large-scale empirical analysis of transnational state ownership relations across the globe. For this we have created a new database that covers all information currently available on over one million state-invested enterprises across the globe. We hope to contribute to the field by making our aggregated data and metrics available to the community.

States do not only regulate, enable and constrain corporate power; they are also actors in the global economy as shareholders of corporations. In this capacity they invest *state capital* into the corporate world, and increasingly so outside their own borders. Such state investment takes place on a continuum from purely return-on-investment-driven to more strategically motivated, controlling investments. Both the 'financial' and the 'political' interest are often intertwined and hard to differentiate, as it can be seen in the general concerns about the 'real' aims and agency of transnationally active SOEs in host countries (Sultan Balbuena, 2016). We suggest a conceptualization of state capital on the basis of ownership-stakes that offers a parsimonious and empirically fruitful way to analyze this on the global level. We develop an approach where ownership ties are weighted based on the ownership stake of the state in the respective corporation. Subsequently we consider the economic value of the corporations that the state is invested in, allowing us to precisely measure not only how often, but also how deep states are invested in corporations in other states around the world. Such a relational approach forms the basis to understand and analyze these transnational state capital investments as a network between states. This is a first and necessary step that allows us to investigate transnational state capital both from an actor-perspective where we uncover

the investment strategies of states, and from a structural perspective where we ask how states are embedded in a global network of transnational state capital. Our approach is therefore an exploratory one, offering key descriptive insights that can help scholars to further theorize and empirically study the rise of transnational state capital.

Transnational state investment remains understudied in part because of a lack of global data on this issue, as most studies are concerned with only one or a few cases of transnational state ownership. In contrast, we develop a new extensive dataset covering all information currently available pertaining corporate state ownership across the globe. While this approach limits our ability to study the detailed particularities of cases, it presents the much-needed opportunity to go beyond and add to existing case-studies and piecemeal evidence. The data-driven empirical strategy, for instance, does not require us to assume beforehand which states are likely candidates in this game of transnational investment.

With this approach we aim to lay the groundwork for conceptualizing, analyzing and understanding the phenomenon of transnational state capital. We offer a set of conceptual and empirical findings: *Conceptually*, we design a framework for analyzing strategies of cross-border state investment that for the first time comprehensively describes and analyzes the phenomenon of transnational state capital on the basis of global ownership relations data. We furthermore establish a measure for the specific roles states find themselves in when they engage in transnational investment: they can be senders, targets or, in some rare instances, also sender-targets of transnational state capital. *Empirically*, we find that states can employ two diametral types of strategies of transnationalization as it is exemplified by the two largest owners of transnational state capital: while Norway seeks to receive return on investments through portfolio investment (financial strategy), China shows a clear tendency toward acquiring majority stakes in their transnationally invested firms (control strategy). Control strategies are more pronounced, with 15 out of the top 20 largest state-as-owners embracing this type of strategy. A network analytical approach allows us to further differentiate and distinguish between groups of states that are either clear targets of state investments (such as the Netherlands, Germany, the US, the UK and Australia) or senders (e.g. Norway, China, Russia, Sweden and Canada, but also Qatar, Saudi Arabia and Kuwait) of transnational state capital. A set of mixed cases with similarly high levels of in-and outflow of state capital may represent hubs of transnational state capital in the global economy (such as Singapore).

Our findings address a particularly problematic lacuna in the existing literature on outward state investment strategies: when states invest abroad, do they behave rather as 'good citizens', i.e. like their non-state peers, or do they challenge and transform the rules and structures of global capitalism? Existing research comes to very different verdicts, where state capital is on the one hand mimicking private capital (Clark, Dixon, & Monk, 2013, p. 8) and on the other hand a possible tool of geopolitical rivalries (Cohen, 2009). While we do not claim to resolve this thorny issue of transnational state investment, we present a novel and data-driven way to assess it in an empirically meaningful way. By placing states as owners on the continuum between controlling and financial interest, our approach and findings show, how and to what extent states use different strategies when transnationalizing their investment. Moreover, we discuss in our findings section how these strategies are reflective of

possible different intentions of different states as owners. Our findings hence make an important contribution to the literature on the strategic dimensions of transnational state investment vis-à-vis the global political economy.

We proceed by delineating the theoretical underpinnings of our approach and situating it in the relevant literatures. Second, we describe our methodological considerations and discuss our data. Third, we demonstrate empirically the transnational dimension of state ownership and its implications for the global network of state capital. Finally, we discuss the implications and the agenda of a systematic analysis of state capital for further research.

2. State capital within transnational capitalism

2.1. Globalization and the ambiguous rise of state capital

Understanding the role(s) of the state in capitalist economies is a key question of political economy research. Depending on the perspective, the state can, inter alia, be understood as market creator, regulator or representative of (domestic) capital (van Apeldoorn, De Graaff, & Overbeek, 2012). The degree to which the state fulfills and also extends those roles in economic matters varies historically. According to Nölke (2014), these varying levels of state involvement in the global economy cluster in at least three major waves: in the late 19th, the mid-20th and now the early 21st century (p. 2). Those waves mark a general rise of the state in the management of the economy on a globally significant scale. The most recent wave, beginning with the early 2000s and accelerated after the Great Recession, saw the rise of so-called emerging economies like the BRIC(S) and other, mostly East-Asian states in the global economy. Those actors embraced an economic model that has been summarized as 'state-permeated' (Otero-Iglesias & Vermeiren, 2015) market economy. Unlike earlier waves, the current one is very much shaped by state-led corporate investments through state-owned multinationals (Cuervo-Cazurra, 2018) or globally active SWFs (Haberly, 2011) that conduct large-scale economic operations like state-led cross-border M&As (Clò, Fiorio, & Florio, 2017) or foreign takeovers (Karolyi & Liao, 2017). The transnational nature of these phenomena makes the current wave of statism the first truly global one. While previous peak phases of statism were mainly focused on either protecting or developing domestic economies through tariffs, protectionism of infant industries, strong and centralized industry coordination and corporatist arrangements (Nölke, 2014, p. 3), the current wave embraces a distinct form of integration and embedding into global structures, mainly through cross-border investment.

How does this integration of state capital into the global economy take place? Some scholars observe that states 'reinvent' themselves as owners of firms and flexibilize these arrangements into an 'array of distinct models' (Musacchio & Lazzarini, 2014, p. 282) such as majority or minority investors in SOEs and through SWFs in the global economy. This adaption to structures of the global economy could be interpreted as an almost seamless integration, e.g. in the case of SWFs that

> match, mimic and approximate the management structure and governance practices of pension funds, endowments, and foundations, all of which also rely upon global financial markets for investment opportunities (Clark et al., 2013, p. 8).

But we can also observe that those very same SWFs are feared by many governments as instruments of geopolitical interest (Cohen, 2009), which stands against the narrative of a seamless integration. Furthermore, large SOEs like National Oil Companies are described as politically deployed 'tools' to go abroad (Bremmer, 2010, p. 60) or even as 'weapons' (Kurlantzick, 2016, p. 203) of statist regimes. In a less exaggerating tone, scholars find that especially with fully owned SOEs the possibility of an 'internationalization of political objectives' cannot be dismissed easily (Clò et al., 2017). An array of labels has been generated to describe this general ambiguity of state-led foreign investment with regards to globalization: the 'hybridization of the State-Capital nexus' (De Graaff, 2012), or SOEs as 'hybrid organizations' in general (Bruton, Peng, Ahlstrom, Stan, & Xu, 2015); the rise of 'state-owned multinational enterprises (SOMNCs)' (Cuervo-Cazurra, 2018); 'refurbished state capitalism' (McNally, 2013) or simply an ambiguous new form of 'statist globalization' (Harris, 2009).

These labels and related definitional ambiguities illustrate how the respective literature grapples with finding a straightforward way of classifying state-led foreign investment either as adapting to or as contesting global capitalism. With the conceptual groundwork and empirical findings of this article, we seek a data-driven and empirically rich contribution to this lacuna of existing research. The described and attributed strategies of states as owners in the global network of state capital are a first step in this direction: we develop this contribution by distinguishing broadly between state strategies that show a clear interest in financial returns on investment (and thus more adaptation to transnational capitalism), and others that predominantly seek to control the firms they invest their state capital in (and thus carry the potential for a more state-controlled form of global expansion). Our results hence implicate that tackling the question of adaptation or challenge need to be answered at the level of state strategies. This differentiation in outward strategies is of course not the whole story: by 'zooming in' on some of the strategic forms and targets in our discussion, we illustrate possible rationale for adapting a specific strategy and how this choice is reflected in our findings.

In order to conceptualize those strategies, we first review the existing literature on the phenomenon of transnational state investment in the following section. This provides us with the core ingredients out of which we build our framework.

2.2. (Transnational) state investment in IBF, CPE and IPE

The rise of transnational state capital has mainly been approached by three sets of literatures, each offering a particular analytical angle on the topic (Table 1). First, there is the work in the distinct but related fields of International Business and Finance studies (IBF), focusing on the firm-level. Second, Comparative Political Economy (CPE) considers the state-level and, third, International Political Economy (IPE) that considers the global economy. Each of these literatures offer important notions that serve as building blocks of our conceptualization (column 'Conceptual implications' in Table 1). We focus on those issues that are relevant for better understanding the transnationalization of state capital, and not on the rise of state capitalism itself (for a good overview see Alami & Dixon, 2019).

In the fields of International Business and Finance, the object of research is the state-owned or state-invested enterprise (SOE or SIE) and respective questions are concerned with the forms and consequences of state ownership on the firm.

Table 1. Theoretical perspectives on state capital transnationalization.

Perspective	Research object	Central research topic	Core findings	Conceptual implications for our analysis
International Political Economy (IPE)	Global Political Economy Order	Role of State Capitalism in global power relations.	State Capitalism as potential challenge for the global economic order (Kiely, 2015; Stephen, 2014) States are crucially involved in global value chains (Mayer & Phillips, 2017)	Rise of state capital implies systemic ramifications for global capitalism (van Apeldoorn et al., 2012)
Comparative Political Economy (CPE)	Varieties of (State) Capitalism	Implications of State Capitalism for VoC. Domestic causes of state-led internationalization.	State capitalist internationalization is shaped through formal and informal domestic institutional settings (Nölke, 2014)	States can be treated as strategic economic owners, thereby merging different forms of state ownership for political economy explanation of internationalization (Carney, 2018)
International Business and Finance (IBF)	The (majority/ minority) state-owned firm	Causes and effects of state ownership internationalization via SOEs and SWFs.	Internationalization of state ownership is increasing (Karolyi & Liao, 2017) SOEs are (broadly speaking) internationalizing for profit *and* political reasons (Cuervo-Cazurra et al., 2014)	Ownership level and corporate control are related which is relevant for different outward strategies of states (Claessens et al., 2000)

Relevant questions are for instance how far classical theories of the firm can grasp SOE internationalization (Bruton et al., 2015; Cuervo-Cazurra, Inkpen, Musacchio, & Ramaswamy, 2014) or what the effect is of majority- (or minority) state ownership on FDI-decisions by those firms (Cui & Jiang, 2012). Internationalization is studied from the perspective of SOEs when they 'go abroad' to compete with privately owned firms for resources on global markets (Bass & Chakrabarty, 2014) as well as from the perspective of SWFs, where previous work finds that investment by politically controlled SWFs can have negative effects on firm value and performance (Bortolotti, Fotak, & Megginson, 2015). The IBF-literature is also interested in host countries and the role of institutional pressure for the entry of foreign SOEs into domestic markets (Meyer, Ding, Li, & Zhang, 2018).

Comparative political economy on the other hand investigates the institutional and socioeconomic settings as conditions and context of SOE internationalization and its facilitation through the state (Nölke, 2014). It thus stands close to the Varieties of Capitalism (VoC) literature, analyzing institutional complementarities at the state level. Work in this field for instance sees financial globalization as a key challenge that triggers statist responses (Carney, 2015), analyzes how new forms of state capitalist arrangements of economies really differ from earlier forms of rent-seeking systems (Aligica & Tarko, 2012) or studies how industrial 'catch-up' can be realized through state-backed firm internationalization (Ozawa, 2014). Carney (2018) demonstrates how the capacity and motivation of states to intervene in their cross-border owned firms is crucially dependent on the regime type. Another string of CPE-studies analyzes the other side of foreign state investment, namely its handling by the target state (Thatcher, 2012; Thatcher & Vlandas, 2016). This literature understands SWF investment as a source of patient capital (Deeg & Hardie, 2016) that is complementary to the institutional setup of the target country.

The IPE[1] perspective on the contrary does not have a specific institutional focus (like the firm or the state), but rather analyzes the global systemic ramifications of foreign state investment. Relevant themes here are the potential of emerging economies to challenge the global economic order in the future (McNally, 2013), but also changing global class relations in the wake of statist global expansion (Robinson, 2015). As De Graaff and van Apeldoorn (2017) argue, the meager transnational presence of 'statist' Chinese elites in Western corporate networks might be a sign of a limited systemic challenge of transnational state capital. Furthermore, global value chains (GVCs) and the role of state ownership and state involvement within those are an important part of the IPE-dimension. This line of work takes the transnationality of state involvement seriously, for instance by analyzing state ownership and strategy in specific GVCs (Adolf, Bush, & Vellema, 2016), the role of states as regulator, producer and buyer within those chains (Horner, 2017) and the conceptual role of state agency and power within them (Mayer & Phillips, 2017). Accounts that put more emphasis on the geographical dimension of foreign state investment confirm the centrality of state capital for the global network of corporate control (Haberly & Wójcik, 2017).

All three perspectives bear important insights that serve as building blocks for the following conceptualization. The IBF scholarship provides us with a profound understanding of the relation between ownership stakes and corporate control. We therefore build our conceptualization of the different strategies states choose when

transnationalizing their investment on the different types of ownership ties that result from such investment (see next section). This furthermore involves a discussion of the appropriate thresholds for different ownership ties and where a cutoff is theoretically and empirically useful (see e.g. Claessens, Djankov, & Lang, 2000). Both notions – the relevance of ownership ties for questions of corporate control and the appropriate cutoff of the ownership stake – are fundamental to our conceptualization and derived from previous work in the International Business and Finance literatures.

The CPE-literature subsequently provides us with a solid understanding of states as owners in the global economy. Whereas many accounts of foreign state ownership focus on different institutional and firm-level factors, the CPE-perspective puts more emphasis on the state as an economic actor. This allows for a better understanding of how states create different strategies when they compete for financial returns or corporate control in the global economy. For our conceptualization this means that we focus on state strategies as such and not on the particular institutional form of ownership organization through which such a strategy is enacted. As Carney (2018) argues, both prevalent institutional forms of foreign state investment – SOEs and SWFs – are government-controlled and can therefore be brought together in explaining the transnationalization of state control via state ownership. We hence follow the CPE-literature in bringing together different types and forms of state ownership at the state level in order to understand the aggregated strategies and relations states form through foreign investment.

Finally, the IPE-literature provides us with a systemic perspective on the consequences of the rise of transnational state capital that guides our descriptive analysis. The core topics of the IPE-perspective are possible effects of foreign state investment on global power relations and how the relations between investing and invested states are influenced by this rise of state capital. We are able to investigate the resulting network of transnational state ownership and assess the different roles states as owners take vis-à-vis each other. Our mapping of senders and targets of state capital lays the groundwork for further empirical analysis that investigates the phenomenon from a systemic perspective. These considerations are driven mainly by the questions opened up by an IPE-perspective on transnational state capital.

In sum, the existing literature offers us three entry points – the centrality of ownership ties, the role of the state as transnational owner and the systemic ramifications of transnational state capital – which we build upon in our following conceptualization.

3. Conceptual framework and empirical research strategy

3.1. Transnational ownership ties

We empirically study the rise of transnational state capital through investments states make in corporations in other countries. When a state or otherwise state-owned entity (like a SWF) invests outside its own borders, a transnational ownership tie is created (see Figure 1). The level of ownership may vary from very little to full ownership. As with all ownership ties, the shareholder (in this case the state or a SOE) receives dividends on its investment and gains a certain control over the corporation invested in, typically (but not always) equal to the proportion of the shares the state holds.

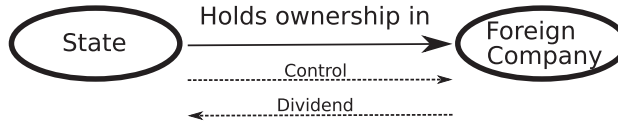

Figure 1. Transnational state ownership ties.

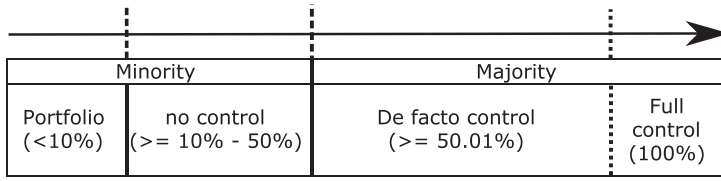

Figure 2. Different levels of transnational state ownership. Arrow represents ownership tie.

State ownership relations are rarely as straightforward as in Figure 1 as corporate ownership is typically organized in longer chains of ownership (Garcia-Bernardo, Fichtner, Heemskerk, & Takes, 2017; UNCTAD, 2016; Vitali, Glattfelder, & Battiston, 2011). For instance, the state can be the ultimate owner of a firm through its SWF. Or, a corporation in France is owned by a SOE in Russia, which is owned by the Russian state. Also, states often hold equity investments in firms through several distinct state entities at the same time, for instance through both a state pension fund, a department, or a state investment bank. As explained above, we do not consider the particular ways in which states organize their ownership, as we are interested in instances where a corporation is (in part) owned by a foreign state (through any of its state entities). State ownership either comes from the state directly, or from a SOE.

The ownership arrow in Figure 1 may represent full, majority or minority ownership as specified in Figure 2. By considering different levels of ownership we can distinguish between states that predominantly seek full corporate control and those states that predominantly invest through smaller portfolio investments. Portfolio investment (below the 10%-threshold) reflects a non-controlling strategy, where states are more interested in returns on investment. It consequently represents a *financial* strategy. Ownership patterns that are focused on acquiring controlling stakes – i.e. more than 50.01% or even full ownership – reflect a *control* strategy. Such controlling orientations are more likely to be associated with geo-economic and geopolitical ambitions, especially if they include strategic sectors such as oil or energy in general (Amineh & Guang, 2014). Utilizing these distinctions in ownership levels allows us to probe the strategies of states when they rise as owners within transnational capitalism.

In addition, we can give an approximation of the 'value' of the investment and hence the amount of transnational state capital attached to the ownership tie by taking into account the size of the firm, using for instance revenues or market capitalization. This value can be seen as the weight of the tie. By considering the weight of the ties we can construct a network of global transnational state capital and investigate how states are positioned as owners vis-à-vis others.

This conceptualization allows us to analyze the actor-side and the structural or network side of transnational state capital and the remainder of this section

develops an empirical research strategy for this. But there is another pronounced advantage of our empirical approach. It allows us to determine the volume and weight of transnational state capital without relying on aggregated macroeconomic data like FDI-levels. This helps us to overcome the sizable issues related to the accuracy of macroeconomic indicators in times of globalization (Linsi & Mügge, 2019). By using fine-grained, firm-level data we focus on the actors themselves we seek to analyze, namely corporations and states.

3.2. Actor-perspective: differentiation of ownership levels

Dividing the ownership tie into different slices of ownership levels reflects the idea of different degrees of control states acquire by investing in corporations outside their borders. The main distinction here is between minority and majority-stakes. We follow the literature in this general differentiation of ownership levels (see Musacchio, Lazzarini, & Aguilera, 2015).[2] We ascribe corporate control to all stakes beyond the 50.01% threshold. As Cuervo-Cazurra et al. (2014, p. 924) argue, the 'one share one vote'-assumption needs to be handled with caution in the case of SOEs, since state control does not need to be correlating with ownership levels: control could be exercised through so-called 'golden' shares or through entirely informal channels outside formal ownership structures. Our threshold is therefore a conservative one, since it assigns control only to shares above 50.01% of the total ownership stakes. The differentiation between majority ('de facto' control) and full control is consequently neglected. The financial strategy is ascribed to portfolio investments not larger than 10%. Our choice corresponds to the threshold set by the United Nations Conference on Trade and Development for perceptible state influence (and thus beginning control) (He, Eden, & Hitt, 2016, p. 118). Since the ability to exert control in a company is limited for low ownership stakes, investments below the 10% threshold represent the strongest case for financial interest, not aiming at controlling the invested firm. This basic differentiation helps us to empirically understand if strategies reflect a financial or rather a strategic, controlling interest. We take the cases of portfolio investment (below 10% ownership stake) as an indicator of a financial interest and everything above 50.01% as an indicator of a controlling interest (in our robustness checks in the Appendix we also consider lower bounds for controlling interest).

This differentiation is in reality of course not a categorical one, but rather a continuum. A strategy that is clearly focused on controlling corporations outside a state's borders is not per se one that is entirely uninterested in receiving returns on investment. At the same time, a fairly low ownership stake can imply more than 'just' a financial interest: lower stakes in publicly owned firms with a dispersed ownership structure can already equate to a controlling stake, depending on other factors than just its percentage (Cubbin & Leech, 1983). Differences between publicly listed and privately owned firms can also influence the amount of control that comes with an ownership stake (La Porta, Lopez-de Silanes, & Shleifer, 1999). There is a series of factors that influence the internal and external governance (and, in the last instance, control) of a firm such as the role of managerial agency, the amount and power of blockholders, the degree of dispersion of a firm's ownership structure, legal circumstances that differ in different jurisdictions, market structures in which firms operate and more (see Gillan, 2006). In sum, ownership

structures and the related question of corporate control tend to differ in different circumstances and especially in different parts of the world (Aguilera, de Castro, Lee, & You, 2012; Claessens et al., 2000). This has implications for a conceptualization of (state) corporate control on a global scale like we do here. We incorporate a large number of states as owners from all over the world who invest in different types of firms (publicly listed and private) in a large number of different jurisdictions. Furthermore, the circumstances of ownership settings can differ depending on which type of state entity creates them – a SWF, SOE, a state holding company or others. All these considerations make it notoriously difficult to find a way of adequately conceptualizing and measuring transnational state capital on a global scale.

Our proposed solution – ascribing a financial interest for portfolio stakes and a controlling interest for majority stakes – represent a middle ground for three reasons. First, we acknowledge that the different ownership types are not categorical, but that the range from 0 to 100% ownership is a continuum where higher stakes *tend* to imply control and lower stakes *tend* to imply financial interest. This means that our conceptualization is designed to capture these tendencies on an aggregate level: does the data we analyze on a state's transnational investment activity point to a rather financial or rather controlling interest? Second, we stick to the standard definition of non-controlling state ownership stakes as defined by the UN and apply a conservatively high threshold for controlling stakes. This should ensure a higher degree of certainty: *only* if a state mainly engages in clear majority investments we speak of a controlling interest. This does not imply that states cannot secure controlling stakes by lower ownership stakes in some cases, but that the overall strategy of this state points to one of those alternative strategic orientations. Third, we differentiate the strategies further based on *where* a state sends or invests its transnational state capital. This uncovers seven different strategies (see Table 3)

Table 2. Key descriptives of our dataset.

# States as owners	161
# State-owned entities	1,080,764
# Transnational state-owned investments	114.037
# Transnational state-ownership investments with revenue $\geq$ 10 mn. USD	22.182
Sum of revenues	44 trillion USD
Total number of employees	118 million
Total assets	41 trillion USD

Table 3. Classification of transnational state ownership strategies.

		Ownership segment		
		<10%	10-50%	>=50.01%
Total amount of transnational state ownership in this segment	90% or more	*Financial (F)*	*Mixed (M)*	*Control (C)*
	Below 90%, but 50% or more	*Dominantly financial (FD)*		*Dominantly control (CD)*
	under 50%, but relative majority of state capital	*Mixed financial (MF)*		*Mixed control (MC)*

'Ownership segment' describes the three different segments of the ownership chain (Figure 2) where transnational state capital can be located. The left axis ('Total amount … ') indicates, where and how much of the total transnational state capital of a state is located in the respective segments. The table reads as follows: 'If 90% or more of a state's transnational state capital is located in the segment of under 10% ownership stakes, it embraces a financial strategy'.

and substantiates the idea of a continuum, ranging from purely financial to more mixed cases to purely controlling. Our high thresholds for 'pure' cases – 90% of a state's total transnational state capital located in either portfolio or controlling stakes – underline the fact that we do not just present an arbitrary and dichotomous division of strategies, but that we dedicate as much diligence as possible to underscore our understanding of the ownership spectrum as a continuum rather than a strict division of strategic orientations. By categorizing the entire set of ownership ties a state has along this continuum we get a 'fingerprint' that is as close as possible to a systematic distinction of strategies that states employ.

3.3. Network-perspective: weighting ownership ties

The second part of our empirical analysis looks at the structural side of transnational state capital. The set of all transnational state ownership investments together forms a global network of transnational state capital, where states are invested in corporations located in other states. The study of corporate ownership networks is a well-researched approach to understand global ties of corporate control (Garcia-Bernardo et al., 2017; Vitali et al., 2011). This approach allows us to investigate how states as owners are related to each other in the network of global state capital: who owns, who is target of state investment and who dominates the network?

To derive insights from a network, the ties need to be comparable to each other. If we take a tie as representing an unweighted ownership investment, all ties are equal – independent of the ownership slice they represent or the firm they are invested in. If we are interested in the positions that state as owners take *vis-à-vis* each other, we need to assign a value or weight to the ties they form around the world. We use operating revenue (turnover) as a proxy for the size of the target firm and thus the volume of state capital operating transnationally. While other proxies such as market capitalization, assets and number of employees could also be useful, operating revenue has advantages over them. Unlike market capitalization, operating revenue is also relevant for private and unlisted public firms. Furthermore, unlike assets and employees, revenue has a higher data quality in the Orbis database we use to source our information (see also Garcia-Bernardo & Takes, 2018). Finally, revenue captures better the idea of transnational state *capital* being sent out: with employees, we would be looking at a proxy for firm size that can be decoupled from the actual value of the investment; with assets, financial firms would be disproportionately represented in the sample. The Appendix includes a number of tests we conducted with alternative indicators (see section under 'Further robustness and data quality checks').

We weight the ties by the ownership stake they represent and the operating revenue of the invested firm:

$$\text{tie weight} = \text{ownership stake} \times \text{operating revenue}$$

where the ownership stake is a value between 0 (0% ownership) and 1 (100% ownership) and the operating revenue is measured in US dollars. The set of weighted ownership ties together forms the global network of transnational state capital. We aggregate all the ownership ties that exist between a state A and corporations in another state B, and consider this a directed tie from state A to state B. The weight

of this tie is the sum of all the underlying (weighted) ownership ties. Of course, state B can also have invested in firms in state A; the ties are directed but can be reciprocated. Following our conceptual framework, the next section first shows how states can be classified as owners and introduces the concept of *strategic* or *controlling* and *financial* or *non-controlling* strategies and subsequently analyzes the network of transnational state capital. On this basis we introduce the idea of a distinction between state investment senders and targets. This allows us to illustrate the different ways of how state capital integrates into the structures of global capitalism.

4. Empirical results

4.1. Data cleaning and enhancement

We source our raw data from Bureau van Dijk's' Orbis database (December 2017), which contains information on over 200 million companies worldwide, and use this to construct a novel database on state capital. A detailed description of all the steps necessary to construct this new dataset, as well as information on our data selection and cleaning strategy is available in the Appendix. First, we identify all firms and organizations that are state-owned. This gives us an initial list of 1,080,764 entities. As we are interested in cross-border state ownership investments, we do not consider domestic SOEs. This brings us down to a set of 114,037 transnational state investments. To further increase the probability of including globally relevant and active companies, we consider only firms with revenues higher than ten million USD. This leaves us, after several other cleaning steps described in the Appendix, with a final empirical universe of 22,182 transnational state ownership relationships. With this information, we have been able to create for the first time a comprehensive network of transnational state capital. Table 2 entails some basic descriptives of our dataset.

4.2. State strategies in transnational state capital

How and why do states invest their capital into the global economy? Figure 3 shows that the large majority of transnational state ownership *ties* represents portfolio investment below the 10% threshold (Figure 3). Closer inspection reveals that Norwegian ownership ties make up nearly half of the cases, probably also due to a high degree of transparency of the Norwegian SWF. However, portfolio investment significantly exceeds other segments even after subtracting the Norwegian ties. It is striking that the mean operating revenue of the firms in the portfolio segment is more than 13 times higher than the respective mean of the fully owned-segment, including high-profile target firms like Chinese oil giant CPCC, Glencore, Apple or Amazon. Turning to the amount of transnational state capital these ties represent, we find that over 56.4% of global transnational state capital is located in majority state-owned firms (Figure 4). This is consistent given our approach of weighting the ownership ties by the revenue of the target firm, which increases the tie weight of majority-owned firms. The portfolio segment still represents over a third of the total amount of transnational state capital (34.2%). The strong participation of states in portfolio investment demonstrates that states do participate in investment

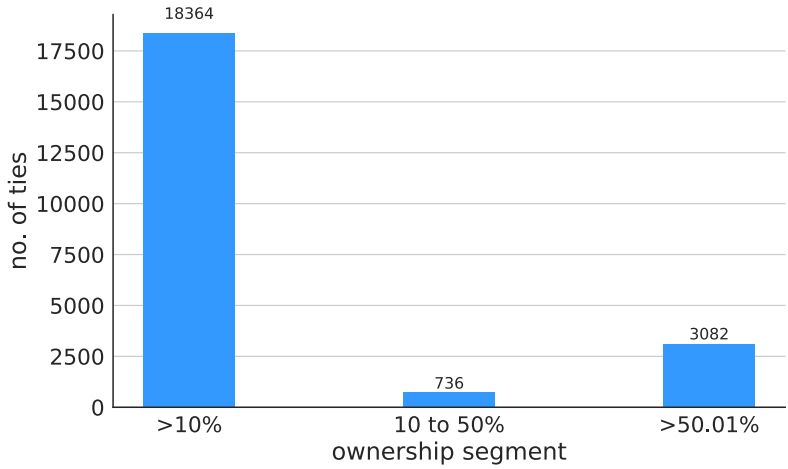

Figure 3. Distribution of the number of transnational state ownership ties by ownership segment. The *x*-axis entails the different ownership segments, the *y*-axis the respective number of ownership ties in each segment.

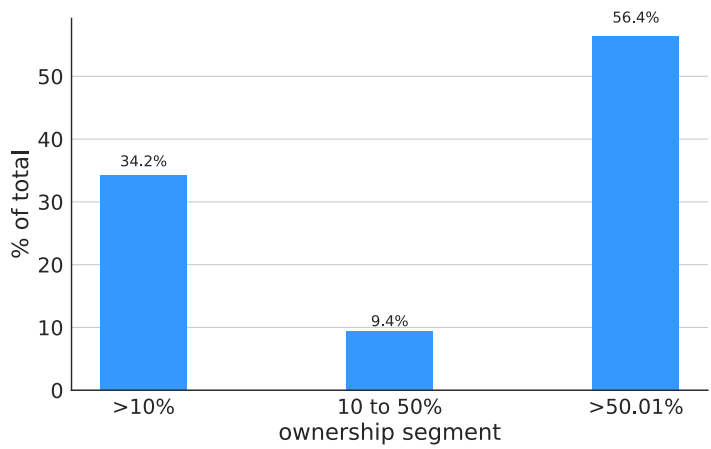

Figure 4. Distribution of total transnational state ownership by ownership segment. The *x*-axis entails the different ownership segments, the *y*-axis the percentage of the total transnational state ownership that is located in each segment.

forms similar to other institutional investors and thus illustrate the limitations of the states vs. markets metaphor in global contemporary capitalism (see also Clark et al., 2013, p. 9). States and corporations are not mutually exclusive actors, but also compete in (financial) markets for relative gains with each other. We discuss later how this influences our findings on different strategies of foreign state investment in the global political economy.

Looking at the states as owners themselves, we can identify different ownership patterns, reflecting different strategies of state capital transnationalization. Figure 5 shows examples of these strategies, which do indeed quite differ. Rather state-permeated economies like China, Russia, but also France embrace a state capital transnationalization strategy that relies on majority investments, whereas more liberal economies like the USA invest portfolio. It does not come as a surprise that states which own a SWF (like Norway or Canada) invest the lion share of their capital through this vehicle and

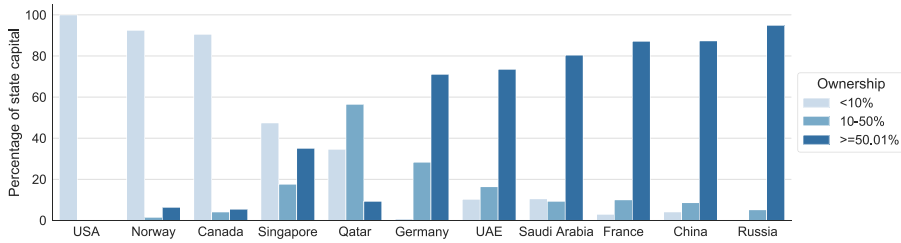

Figure 5. Transnational state ownership profiles for different countries. For selected countries, we report the distribution of transnational state capital among the three ownership categories. *y*-axis entails the percentage of the total transnational state capital for each country.

thus rather as portfolio. These differences allow us to classify how states as owners behave in the global economy and thus examine those strategies analytically. We created seven categories that capture variations of the two core strategies of seeking control or seeking financial returns along the ownership chain (Table 3).

States can invest their capital into different segments of the ownership chain - in portfolio (under 10%), between 10 and 50% and in majority stakes (more than 50.01%). Depending on how much of their total state capital they invest in each of these segments, they employ a different strategy. If 90% or more of the transnational state capital of a particular state is invested in majority or portfolio stakes, we identify a clear control (C) or financial (F) strategy. If this amount is under 90%, but still represents an absolute majority (i.e. is above 50%), we speak of a dominantly control or financial strategy (CD or FD). If there is no segment where the absolute majority of a state's transnational state capital is invested in, we identify the segment with the relative majority: if this is either the portfolio or majority segment, we ascribe a mixed financial or mixed control strategy (MF or MC). If we find a case where the lion share of state capital is located in the 10–50% segment, we treat this as a purely mixed case (for all levels of majority investment, see Table 3).

When we apply these differentiations to the examples in Figure 5, we can identify the following ownership profiles: the USA, Norway and Canada embrace strategy F; Singapore is a MF-case; Qatar is a M-case; Germany, UAE, Saudi Arabia, China and France show a CD-strategy, while Russia is an example of a C-strategy. We calculated the strategic transnational ownership profile for each country in our database. These metrics are available in the Appendix. Of course, while two states can have a similar strategic profile, they may have differences regarding the size and share of their investments in the different segments. For example, Germany and China have the same strategic profile (CD). While this is a relevant and novel observation, we need to take into account that China has over 87% of its transnational state capital located in the majority segment – Germany 'only' 71%. In the Appendix we include this information: for China the strategy is denoted as 'CD-0.87'; for Germany 'CD-0.71'; for France 'CD-0.87'; for Spain 'F-0.96'; for the USA 'F-1.0' etc.

Our approach and data allow us to give relatively precise indications of transnational state capital strategies. China for instance follows a rather controlling (or: CD) strategy (87.35% of its transnational state capital is located in the majority segment), whereas Norway employs a clearly financial (or: F) strategy (92.48% is invested in the portfolio segment). Other cases like Singapore however are less

clear-cut: almost half of its investment is portfolio, but the other half is distributed along the other segments. A closer look at the case points at Singapore's two different state-owned SWFs. While GIC Private Limited acts as a typical SWF and invests *minority* stakes globally, Temasek Holdings mainly controls state-owned assets in and outside Singapore and is thus the main driver of foreign *majority* investments. Our measure of state strategies neatly captures this with Singapore embracing a MF-strategy.

In sum, the analysis of ownership profiles allows us to empirically establish the strategies of states in the transnationalization of state capital. Our examples already reveal interesting observations, such as the role of France and Germany compared to emerging markets. These observations open up a whole range of pertinent questions: in how far are these strategies shaped by path dependency, economic rationales or in fact (geopolitical) strategic motivations? In order to develop answers to such urgent questions we can further utilize the richness of our approach and consider how states are invested in each other.

4.3. Senders and receivers in the network of transnational state capital

Concerns about private foreign corporate ownership have been an ongoing strategic concern for states across the globe. On the one hand, FDI can enhance economic development. On the other hand, when foreign corporations reap the financial benefits of economic activity in one's country, this may hamper development. On top of this, foreign ownership in key firms and strategic industries is typically perceived as a significant political risk. All these concerns become exacerbated when the foreign owner is another state. States can and do invest in (corporations in) other states. These relationships together make up the transnational state ownership network. Figure 6 gives a graphical representation of how states are embedded in a global network of transnational state capital. The figure already illustrates that the network stretches the globe, with some countries at a more central position than others. China and Norway stand out as key investors, while countries such as the US, the Netherlands and Singapore receive large amounts of transnational state capital. Table 4 lists the largest sender and receiving countries of transnational state capital.

Norway controls almost 21% of the total amount of transnational state capital, followed suit by China with almost 20% (Table 4). Here we find at the top of the senders two prime examples of the opposing strategies of financial interest and control interest. When we turn to the targets, we see that Germany, the UK and the US are popular destinations and each receive over or around 10% of total transnational state capital. Followers are Singapore and the Netherlands, of which each receives a considerable amount under 10% of global state capital inflows. It is noticeable that the vast majority of the top 20 targets of state capital can be classified as liberal economies or are at least considered to be part of the liberal world order. This is a clear distinction from the sender group, of which most of the top 20 are to be classified as not being rather statist and/or non-liberal. What is more, we see that transnational state capital integrates into the liberal world order (by high inflows into core European and Anglo-American countries, see Fichtner, 2017) while its senders are less open for receiving state investment themselves.

The volume of state capital outflow gives us an idea about the status of a state as *sender*. Likewise, the inflow indicates in how far a state is to be qualified as

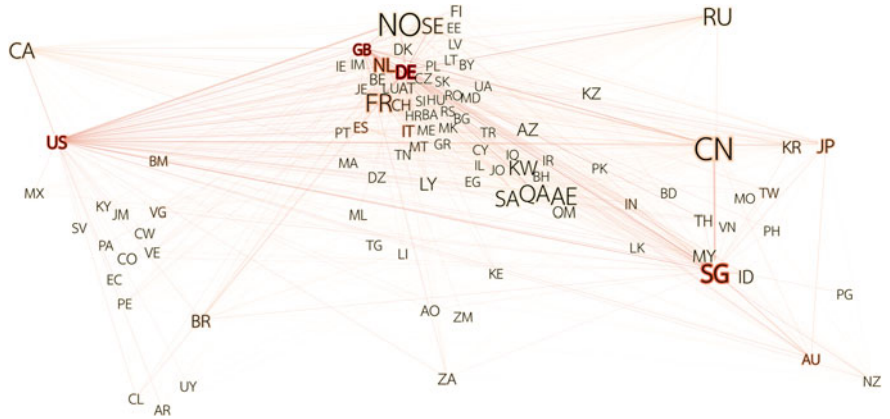

Figure 6. The global network of transnational state capital. The labels are states as owners and the ties represent the in-and outflows of state capital as defined in the article. The label size represents the volume of state capital outflow and the color represents the inflow volume (more outflow = larger label and more inflow = darker/more red label). The edge thickness represents the volume of state capital that is sent from one country to another. We used a mercator projection and Gephi's GeoLayout to order the labels according to their geographical location. Nodes with a degree lower than 200 mn USD in outflow are omitted for representational reasons.

Table 4. Top 5 senders and receivers of transnational state capital.

Country	State capital outflow (in USD)	% of total
Top senders		
Norway	500 bn.	20.94
China	463 bn.	19.35
France	169 bn.	7.05
Singapore	143 bn.	5.98
Arab Emirates	139 bn.	5.80
Top receivers		
Germany	325 bn.	13.58
UK	282 bn.	11.78
USA	238 bn.	9.97
Singapore	224 bn.	9.38
Netherlands	185 bn.	7.75

We calculate outflow by aggregating the sum of weights of the outgoing (sending) and incoming (receiving) transnational ownership ties at the country level.

Table 5. Classification of states as owners in the global network of transnational state capital.

Relation between weighted inflow and outflow (IF and OF)	OF > IF	IF > OF	OF ~ IF
Status	Sender	Target	Sender-target
Agency in the global state capital network	High	Low	Medium

target of state capital. We can classify states as either senders, targets or sender-targets of state capital, depending on the relation between the incoming and outgoing amount of state capital (Table 5). As (clear) senders or targets, states are pivots of state capital: they are either very active in investing their capital around the world or are eager to attract it. As a sender-target, states pursue both activities on approximately the same scale.[3] These different roles arguably come with different degrees of agency: As primarily a sender, agency is high as states can decide about where to move their capital throughout the network. As a target, agency is relatively low since target states can only incentivize foreign state investment, but not

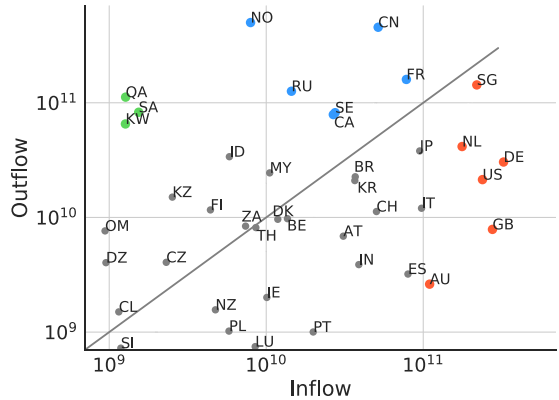

Figure 7. Distribution of states as owners with different in- and outflow of state capital, logarithmic scale. States below the solid diagonal line are targets of state investment, whereas those above the line are senders. States within the boundaries of the two dashed lines can be classified as sender-targets for state capital investment. Being in this area means that the inflow-outflow (or vice versa) ratio of a sender or receiver state is not higher as 2:1. The graph starts at the level of USD 1 bn state capital in-and outflow (lower levels are omitted for representational reasons).

actively control those investment decisions. Sender-targets are theoretically an interesting case, because they on the one hand control their own investment decisions but are on the other hand eager to receive investment by other states. Their agency is thus rather medium, since they represent a combination of the agency spectrums of the other two types.

Figure 7 shows the position of states on the two axes of transnational state capital inflow and outflow. States that are classified as important targets are almost exclusively located in the Western hemisphere, especially regarding higher levels of investment (orange group in Figure 7). On the other hand, the sender group is more mixed, whereby statist economies like Russia, China (blue group) or Middle Eastern actors like Qatar or Saudi Arabia dominate. The latter, plus Kuwait (green group), are extreme examples of senders insofar as the outflow surpasses the inflow by far; the reverse is true for Germany, the UK and US, which show high in-and lower outflows.

There are only two large sender-targets of state capital investment across the sample. France and Singapore have high levels of in- *and* outflows: while France is only just outside the boundaries of the definition (its out-to inflow ratio is 2.05:1), Singapore is a rather clear case with an in-to outflow ratio of 1.53:1. Other, smaller countries with lower levels of in- and outflows like Chile, South Africa or Czech Republic are also sender-targets, although their overall size is rather low. In sum, the number of relevant sender-targets is thus restricted. Information on the sender/target-status of all states in our dataset is available in the Appendix.

Another result from the distribution analysis is that the BRICS-group (Brazil, Russia, India, China and South Africa) is not as coherent as many analyses on the subject suggest. From this perspective, regardless the statist economic model all five states embrace, they display significant differences in the level of state investment in-and outflows as well as on the relation between both: China shows a relatively high outdegree, whereas India for example has relatively average to low outward state investment. South Africa appears to be a state investment sender-target (although on a comparatively low level), whereas China and Russia are not even

close to this status. All of these aspects point out that at least with regard to the present analysis, the BRICS are not a homogeneous group that employ a common state-led transnationalization model.

In sum, among the targets for state capital, states from the Western hemisphere prevail. And while clear sender-targets can be determined, their relevance for the entire network is rather marginal. Except for Singapore and France, there are no sender-targets that at the same time attract and send *high* levels of state capital around the world. This finding might be explained by the different roles states engage in within global capitalism (see also van Apeldoorn et al., 2012): as representatives of their specific national economies, states might be incentivized to attract foreign FDI or other types of investment; and as owners in the global economy, they might be interested in investing their capital abroad. However, in the same sense they might be suspicious of *other states* investing in their economies, especially given an activist and controlling strategy of the investing state. This means that a sender of state capital can logically be relatively defensive toward state investment in its own economy, like the examples of the United Arab Emirates, Qatar or China show. Moreover, target states can be very interested in foreign state investment without themselves being equally strong senders. A good example is Germany, which can be classified as a target and showed an interest in patient capital investment coming from SWFs in the past (Thatcher & Vlandas, 2016). It is thus the more crucial to investigate the interesting cases of France and Singapore in order to determine the role they play in global state investment as sender-targets and how this could be explained by the characteristics of these states as owners of capital.

4.4. Zooming in from the bird's eye view

The empirical exploration above took a step back from the analysis of state capitalism as an economic model in order to develop a more comprehensive and systemic view on cross-border state investment. The results we provided – the strategies of states as transnational owners as well as the network-perspective – offer a global map that provides us with an understanding of *how* states engage in transnational state-led investment. The other important question, namely *why* a state decides to adopt a specific strategy falls outside the scope of our analysis. We assume that each state decides to transnationalize its capital for specific reasons that are related to their strategy of transnationalization, but not fully explained by it. In order to uncover the underlying purpose of such strategies, we need to 'zoom in' on particular cases, which represents an important and promising venue for further research. One particularly salient point that emerged out of our analysis already warrants some first elaboration: why do states with very different political economies show a similar or even the same outward strategy?

A look at the ownership profiles shows that states which are as different as China, Germany, Ireland, Kuwait or France and Russia all embrace a similar outward strategy (either a C or CD-profile). This type of similar observed behavior can however have different reasons. When we zoom closer into these strategies, we find that geography and sectoral specification matter notably (see also Figure A3 in the Appendix). Chinese foreign state investment, for example, is geographically extremely spread: there is a large amount of Chinese state capital located in Western Europe (especially Germany), Australia, South America (especially Brazil),

North America (especially Canada), Africa (mainly South Africa and Zambia) and also Asia (especially Malaysia). In comparison, almost 80% of German state capital is focused on Europe (mainly the UK) and only some minor amounts are invested in Australia, the US and Asia. Ireland is an even more extreme case with over 95% of its transnational state capital located in the UK. Kuwait is similar to Germany with over 90% located in European jurisdictions. The reasons for these differences are connected to the particular purpose on state capital transnationalization in each case: the Chinese strategy should be interpreted in the light of its larger 'going global'-strategy (Shambaugh, 2013) that crucially involves overseas investment in order to become the FDI-superpower that it is already regarding other economic indicators such as trade volume, FDI-inflows, and its spectacular growth-numbers in general (Wang & Miao, 2016). This strategy is mainly driven by large-scale M&A-deals by Chinese SOEs acquiring 'Western' know-how in order to move the Chinese economy 'away from export-driven manufacturing toward high-end, high-tech R&D and domestic consumption' (Baroncelli & Landoni, 2019, p. 21).

This is also reflected in the targets of state capital transnationalization: companies like Syngenta (Switzerland), Nidera (Netherlands) or EDP (Portugal) rank among the largest Chinese state-invested firms. These investments represent pathways for the Chinese state to access cutting-edge know-how in core industries like agrichemicals or renewable energies. Other states with a similar strategic profile embrace a different logic of transnationalization: German foreign state ownership is driven by the acquisition of transport firms (like the British Arriva Group) or the establishment of DB Schenker (the Deutsche Bahn logistics division) subsidiaries across Europe in order to compete in the large European logistics market. Deutsche Bahn, one of the world's leading transportation and logistics companies, is responsible for a large share of German foreign state ownership. As a 'national champion', the company follows a government-backed strategy of becoming 'the world's leading mobility and logistics company' (Berlich et al., 2017, p. 33). This strategy of promoting – and also politically creating – new national (and also European) champions through M&As, FDI and other types of control-strategies is gaining more attraction in European policy-making.[4] The French state capital outward investment strategy shows a similar emphasis on national champions as the prominent role of energy giant EDF in several European countries and also its global outreach suggests. The Irish case, in comparison, is much smaller in size and ambition than the discussed others. Its limited outreach is focused on energy and infrastructure firms that are located mainly in the UK. As the Irish national economic policy board states, the Irish experience with SOE internationalization has at most been 'mixed' as there is not a comprehensive strategic outward orientation like other states demonstrate (Forfás, 2010, pp. 35–36).

The control-strategy that Russia embraces differs from those discussed above to the extent that Russian foreign state ownership is focused on developing and growing its mostly European subsidiaries of its large state-owned oil companies, mainly Gazprom (see also Panibratov, 2017). This strategy is based on the unique position of Russia as the number one gas and crude oil provider for Europe (Boussena & Locatelli, 2017). Besides adapting to a liberalizing energy market in Europe, the internationalization of Gazprom and others has also distinctive geopolitical characteristics (Stulberg, 2015), which is exemplified in the heated debates about the Nord Stream 2 pipeline project (Goldthau, 2016). Besides the numerous Gazprom-subsidiaries there are also financial firms like the European subsidiaries of Russia's

largest banks, VTB Bank and Sberbank that play a role in the Russian outward strategy. Especially Sberbank shows serious internationalization efforts into Europe and Asia as the acquisitions of Volksbank International AG and Turkish Denizbank in recent years exemplify. The financial expansion of Russian state capital is assessed by observers as an attempt to build truly global, competitive financial institutions (Atnashev & Vashakmadze, 2016). In sum, by zooming in we see that the Russian strategy shows a stronger geopolitical rationale than other, similar strategic profiles while also attempting to build national 'financial' champions. Compared to this, the Kuwaitian strategy (which also includes a range of investments in financial companies) aims at investing portfolio in financial firms via its SWF – there is no majority-controlled overseas bank. The cases where Kuwait intends to control its investments in financial firms is when those service firms support either Kuwait's oil business or property investment (e.g. through the Kuwait Petroleum International Treasury Services B.V. or St. Martins Properties Ltd.). Different from Russia, the Kuwaitian strategy is not complemented by developing financial global players, but by a SWF that reinvests the country's oil export revenues. In this sense, Kuwait's outward strategy seems to be closer to an integration into the global economy than using internationalization for geopolitical goals.

We hence see that different variables – the sheer size of a state's outward investment, its geographical spread and target industries – can help us in refining the findings we present in this article. Some of the states we zoomed in on want to integrate into and benefit from structures of global capitalism (Kuwait), others seek to develop their economic power and influence on a global scale (China). Some are focused on European markets (France, Germany) or on geopolitical spaces within Europe (Russia) – others show low ambitions or capacities beyond their immediate neighboring countries (Ireland). What they all have in common is that they try to achieve this by a similar strategic outward orientation: they largely control their overseas investment targets. The purpose and the form of cross-border expansion are hence two complementary characteristics of state capital transnationalization. For our analysis this means that it can serve as a descriptive and exploratory map for a better systemic understanding of these developments.

5. Toward an integrated analysis of (transnational) state capital(ism)

The rise of transnational state capital has been recognized by scholars and the public as one of the central political economy developments of the last two decades, but so far we lacked a systemic, encompassing perspective on its core characteristics and global ramifications. Our descriptive analysis shows on what basis such an endeavor is possible; and how a conceptually careful and empirically thorough approach can help us in tackling the issue comprehensively. This approach consisted of two core elements: a conceptual approach based on weighted ownership ties and an original empirical analysis of the largest dataset on transnational state capital up to date.

Our findings show how states employ different strategies when they invest capital abroad: some seek possibilities for expanding their return on investment and develop a financial strategy. Others use the possibilities to move state capital across borders to create ownership ties that grant them majority control of their invested firms by pursuing a control strategy. We saw how rather 'statist' economies – like China and Russia – embrace a more strategic, control-strategy with regards to

transnational state capital whereas more liberal, or 'Western' economies like Canada or the US employ a rather financial, non-controlling investment strategy. This confirms an intuitive understanding of transnational state capital strategies. However, our results also show that both strategies are dominantly present in the global political economy. While China transnationalizes its state capital in the form of majority or controlling stakes, the other large global owner (Norway) employs a financial strategy by investing over 92% of its transnational state capital portfolio. Further qualitative inquiry into our findings illustrated that the underlying motives of states can be quite different: some want to secure future income for their population and thus seek to reap the benefits of a globalized economy (like in the Norwegian case). Others put more emphasis on direct state control of their foreign assets, seeking to develop national champions within the global economy (like France and Germany). Yet others use the access to globally leading know-how and technology to heave their economic development model to the next stage (China).

Beyond these particular strategies of states, we saw that states may be senders or targets (or both) of state capital investment. As such they relate to other states in a network of dependence and control. This systemic approach allows us to move beyond a bilateral international understanding of state-led foreign investment and study how states are embedded in a network of transnational state capital. The positions states occupy in this network reflect an important part of their power position and their strategy in the global political economy. Our work can serve as a global map of these relations, enabling further scholarly inquiry into the specifics of these relations and further consequences for other policy-fields. As we showed above, the particularities of different state strategies differ across the spectrum and this also applies to their position within the global political economy.

These findings point to one core implication for the literature on foreign state investment: state capital can be transnationalized for a number of reasons, but only in a limited number of forms. We are able to locate an outward strategy on the continuum between control and financial interest and consequently derive its basic position within the sketched debate of adaptation to vs. potentially challenging the rules and structures of the global political economy. While this positioning needs to be complemented by closer, qualitative and case-oriented research on state strategies, our findings contribute to this discussion in two ways: first, we show that strategies from both types are present in transnational state investment. While most of the amount of state capital is invested in majority-controlled firms, the absolute number of investment ties is predominantly portfolio investment. This suggests that the discussion about the nature of transnational state investment needs to be focused on the state-level and the respective strategies employed there. Second, our account of state strategies (see also Figure A1) accomplishes this task in a first comprehensive manner and shows which relevant owners employ which strategy. With this, the discussion about the nature of transnational state capital and its relation to the global political economy can be conducted in a more nuanced way, taking into account the differing strategic choices and related strategic intents as discussed in the findings section. Taken together, we contribute to and nuance the discussion about the possibly (geo)political nature of state capital and lay the groundwork for further research in that direction. Future work can use the conceptual and empirical work for further hypothesis-testing and theoretical

elaboration in order to understand the phenomenon of transnational state capital better.

Our findings consequently touch upon larger theoretical and empirical issues that could not be part of the exploratory and descriptive analysis conducted here. The delineation of different state-strategies raises the crucial question of how to understand the relation between globalization on the one hand and the rise of state capital on the other hand. Thinking in terms of the classical political economy distinction of 'states' and 'markets' (Strange, 1988), this rise is a thought-provoking and challenging political phenomenon. Globalization – if one wants, the marketization of the world – seems to have enabled at least some forms of state capital we analyzed here: especially the new prominence of SWFs is tightly intertwined with the possibilities of today's global financial markets (Clark et al., 2013) and the rise of the multinational corporation through globalization. Although we treated states here mainly as *economic* actors, they are always more than their private competitors: SWFs, for example, enjoy the unique position as state-sponsored funds with no explicit financial liabilities (Bortolotti et al., 2015), which is a source of competitive advantage. SOEs can be tightly state-controlled and used for geopolitical goals, as can be seen in the Russian case (Goldthau, 2016) or they can display different, more politically relevant goals than their private competitors (Florio, Ferraris, & Vandone, 2018). States participate in global capitalism beyond a regulative role, but partake in global competition (Babic, Fichtner, & Heemskerk, 2017). Our description and analysis of different strategies states employ can be a first step in order to distinguish political and other dimension of this competition and consequently delineate the emerging new relations between state power and globalization in 21st century capitalism.

All of this work needs to be complemented by solid empirical efforts to investigate the relations between state capital and transnational capitalism in measurable dimensions. In any case, our results underscore how state ownership in the global economy is more than just a development model or by-product of statist economies. Rather, it reflects specific political economy dynamics that still need to be further explored and understood. The analyses presented here can and should thus work as groundwork for more in-depth analyses of transnationalized state capital. We hope that our encouragement for further research represents more than well-intentioned words but offers a concrete body of data and methods to facilitate practical work on the rise of transnational state capital.

Notes

1. We understand that there are many ways to distinguish between International, Global and other forms of Political Economy. For the sake of simplicity, we dub the study of matters that concern the world economy in its broadest sense as 'IPE'-perspective.
2. Musacchio, Lazzarini, & Aguilera, 2015 also use a fourth main category ('strategic involvement' of the state), which we leave out since this takes place outside ownership structures.
3. We define a sender-target as having an inflow-outflow-ratio (or outflow-inflow ratio) of 2:1 or lower. In Figure 7, this is illustrated by the addition two diagonal lines below and above the 45°-diagonal.
4. See BMWI (2018), a common Manifesto by French and German ministries that calls for a revision of European competition rules in order to allow for large-scale mergers in order to create new national and European champions capable of competing with the world's largest companies for market shares of the future.

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No potential conflict of interest was reported by the authors.

Author's contribution

MB and EH developed the research design and wrote the manuscript. MB developed the theoretical framework. MB and JGB designed the data selection strategy and collected the data. MB performed the data cleaning and analysis. MB and JGB developed the figures. All authors reviewed the manuscript.

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Data availability

The data that support the findings of this study are available from Bureau van Dijk's ORBIS database (https://www.bvdinfo.com/). Restrictions apply to the availability of these data, which were used under license for this study. Data are available from the authors with the permission of Bureau van Dijk. The nationally aggregated and processed data as well as more supplementary material and the Python script is freely available at the Open Science Framework at https://osf.io/fm6a9/.

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Appendix

All the nationally aggregated data, visualizations and codes mentioned or used in this appendix are free to use and can be found in our online repository: https://osf.io/fm6a9/.

Data gathering strategy

We gathered the data used for the paper from Bureau van Dijk's ORBIS database (https://orbis.bvdinfo.com) extracted in December 2017. Data on state investments is not readily available because ORBIS only offers direct information on 'Public authorities, states and government'. Thus, we have no direct information on which firms are SOEs and what are the minority investments by public authorities or SOEs. We used the following strategy to collect the data on transnational state capital.

Firstly, we selected all SOEs: firms fully owned (ownership equal or higher than 50.01%) by entities in the Orbis category 'Public authority/state/government'. The 50.01% threshold is not arbitrary: we want to collect those entities that are state-*controlled*. This does not mean that we do not include stakes below this threshold in a later step, but that our starting point are those entities that either belong directly to the state or are majority owned.

In a second step, we extracted all the ownership relations of the SOEs. Consequently, lower stakes are included in our sample, but only if we can speak of a state-controlled owner of these stakes: If state-owned entity A owns a 10% stake in company B, this is included as state investment. If B now owns itself a 10% stake in another company C, this is not included in our sample because we do not assume that A still controls this investment decision in a sufficient manner. However, if B would be owned 50.01% or more by A, we would include B's investment in C in our sample since B would have been extracted as a SOE in the first step. The result of this search is that we get a list of state entities and at least 50.01% state-owned firms *and* their owned firms, in total 1,080,770 entries. These entries are all ownership relations: we look for state entities and SOEs and the ownership ties they create around the world. This represents the entire sample of state capital we can gather from the ORBIS database on a global scale.

The third step aggregates the ownership relationship at the state level. A firm can be owned simultaneously by two SOEs. For example, imagine that in the first step we found two SOEs fully owned by Germany, SOE_X and SOE_Y. In the second step we find the direct ownership relationship of Germany, SOE_X and SOE_Y. If SOE_X owns 10% of firm A and SOE_Y owns 5% of the same firm, we aggregate the relationships. The result is that Germany owns SOE_X, Germany owns SOE_Y, and Germany owns 15% of firm A.

Finally, we included extra information of the firms (e.g. firm A or SOE_x) such as their operating revenue, their status as reported by Orbis (active / inactive), the type of corporation (public company, branch, etc.) and their jurisdiction.

This final table includes 1.080.770 ownership relations which form the basis for the analysis.

Data cleaning strategy

After creating the final table, we perform some data cleaning steps on the collected data in order to perform the analyses described in the article. The steps are summarized below:

- We replaced Hong Kong country codes (HK) with Chinese (CN) in order to pull both together.
  If we would assume Hong Kong and China as separate actors (states as owners), a large part of the transnational state capital would be located in this relation. It is however not reasonable to assume that Chinese investment in Hong Kong and vice versa is 'transnational', but rather that China uses Hong Kong as a financial and trade hub to send and receive investment in general, including state ownership. The result is that China and Hong Kong are treated as one actor when it comes to state investment in the global economy. This mainly removes the massive Chinese outflows into Hong Kong which skews the global picture toward China.
- We filtered for transnational ownership relations by deleting all entries where the location of the firm is identical with the location of the owning entity. Since we are only interested in transnational relations, we delete the national ones. This results in a significant reduction of the sample because the majority of state capital is located nationally (from 1.080.770 to 114.039 relations).
- We deleted the country code 'ZZ' from the sample, since it does not indicate a country, but trans-or international institutions. One entry was deleted from the sample.
- We set all ownership levels above 100 to exactly 100 in the sample. If a subsidiary is displayed as being owned by more than 100% it means that there is more than one source in the ORBIS snapshot. We then set the ownership level to 100% (see also Garcia-Bernardo et al., 2017; Vitali et al., 2011).
- We dropped all rows with missing values for operating revenue. Rows with missing information on the operating revenue of the subsidiary are not usable for the analysis conducted in the article. 76,654 entries were deleted and 37,385 entries remained.
- We dropped all rows with missing values for the country of the GUO and the owned firm for the same reasons as with operating revenue (see above). 10 entries were deleted and 37,375 entries remained.
- We dropped all rows with missing values for ownership stakes for the same reasons as with operating revenue (see above). 6 entries were deleted and 37,372 entries remained.
- We dropped all rows with inactive firms as reported by Orbis as well as all branches and foreign companies since they do not offer independent financial information. 416 entries were deleted and 36,956 entries remained.
- We dropped all rows with 'YY' as country or GUO. 'YY' indicates that the country of the GUO is unknown which makes the information in the ownership relation superfluous. 3862 entries were deleted and 33,094 entries remained.
- We dropped the International Bank for Reconstruction and Development as a subsidiary, because it is supranational (but for Orbis located in the US). 187 entries were deleted and 32,907 entries remained.
- We dropped all rows with 'II' as country or GUO. 'II' indicates that the subsidiary country or GUO is supranational and thus not a state, which makes the information in the ownership relation superfluous. 840 entries were deleted and 32,067 entries remained.
- We created a variable with the definitive ownership stake used for the analysis. Orbis reports both direct and indirect ('total') ownership stakes. Since the two numbers are sometimes obtained from different sources, part of the ownership can be unaccounted for one or the other source. To correct for this, we kept the largest of both numbers.
- Finally, we created a variable for measuring state capital by multiplying the ownership stake with operating revenue for each ownership relation. In order to assess the weight of the ownership ties created by state capital transnationalization we need a measure which is the described variable. We derived a measure for state capital and assigned a value to each row in the data sample.

Ownership profiles/strategies for all states in the sample

We created a table that includes all the ownership profiles for all states that appear as owners in our data (Figure A1). We determined the part of the ownership chain where the most

State	% in Portfolio Stakes	% in 10-50% Stakes	% in Majority Stakes	Largest Segment	Strategy
Afghanistan	100	0	0	portfolio stakes	F - 1.0
Albania	100	0	0	portfolio stakes	F - 1.0
Algeria	58.78	14.93	26.3	portfolio stakes	FD - 0.59
Angola	0.08	99.29	0.62	10-50% stakes	M - 0.99
Argentina	0	75.78	24.22	10-50% stakes	M - 0.76
Australia	45.2	0.95	53.85	majority stakes	CD - 0.54
Austria	1.33	6.84	91.83	majority stakes	C - 0.92
Azerbaijan	1	0.03	98.97	majority stakes	C - 0.99
Bahamas	100	0	0	portfolio stakes	F - 1.0
Bahrein	0.91	25.96	73.13	majority stakes	CD - 0.73
Bangladesh	37.45	0	62.55	majority stakes	CD - 0.63
Barbados	100	0	0	portfolio stakes	F - 1.0
Belarus	0	41.63	58.37	majority stakes	CD - 0.58
Belgium	39	1.14	59.86	majority stakes	CD - 0.6
Belize	100	0	0	portfolio stakes	F - 1.0
Benin	100	0	0	portfolio stakes	F - 1.0
Bolivia	100	0	0	portfolio stakes	F - 1.0
Bosnia and Herzegovina	0	14.99	85.01	majority stakes	CD - 0.85
Botswana	100	0	0	portfolio stakes	F - 1.0
Brazil	0.02	1.64	98.34	majority stakes	C - 0.98

State	% in Portfolio Stakes	% in 10-50% Stakes	% in Majority Stakes	Largest Segment	Strategy
Brunei Darussalam	100	0	0	portfolio stakes	F - 1.0
Bulgaria	39.61	60.39	0	10-50% stakes	M - 0.6
Burkina Faso	100	0	0	portfolio stakes	F - 1.0
Burundi	100	0	0	portfolio stakes	F - 1.0
Cameroon	100	0	0	portfolio stakes	F - 1.0
Canada	90.54	4.06	5.4	portfolio stakes	F - 0.91
Cape Verde	100	0	0	portfolio stakes	F - 1.0
Central African Rep.	100	0	0	portfolio stakes	F - 1.0
Chad	100	0	0	portfolio stakes	F - 1.0
Chile	6.28	0.17	93.56	majority stakes	C - 0.94
China	4.08	8.57	87.35	majority stakes	CD - 0.87
Colombia	3.17	2.03	94.8	majority stakes	C - 0.95
Comoros	100	0	0	portfolio stakes	F - 1.0
Congo	100	0	0	portfolio stakes	F - 1.0
Costa Rica	22.08	0	77.92	majority stakes	CD - 0.78
Côte d'Ivoire	100	0	0	portfolio stakes	F - 1.0
Croatia	22.5	20.52	56.98	majority stakes	CD - 0.57
Cuba	100	0	0	portfolio stakes	F - 1.0
Cyprus	0.87	30.26	68.87	majority stakes	CD - 0.69
Czech Rep.	22.34	3.89	73.78	majority stakes	CD - 0.74

Figure A1. Ownership profiles and strategies for each state in the sample. For the editable csv-file see https://osf.io/fm6a9/.

State	% in Portfolio Stakes	% in 10-50% Stakes	% in Majority Stakes	Largest Segment	Strategy
Denmark	2.1	31.26	66.64	majority stakes	CD - 0.67
Djibouti	100	0	0	portfolio stakes	F - 1.0
Dominican Rep.	100	0	0	portfolio stakes	F - 1.0
DR Congo	100	0	0	portfolio stakes	F - 1.0
Ecuador	100	0	0	portfolio stakes	F - 1.0
Egypt	22.39	9.21	68.4	majority stakes	CD - 0.68
El Salvador	100	0	0	portfolio stakes	F - 1.0
Equatorial Guinea	100	0	0	portfolio stakes	F - 1.0
Estonia	0	0	100	majority stakes	C - 1.0
Ethiopia	100	0	0	portfolio stakes	F - 1.0
Finland	5.04	13.85	81.11	majority stakes	CD - 0.81
France	2.89	9.96	87.15	majority stakes	CD - 0.87
Gabon	100	0	0	portfolio stakes	F - 1.0
Gambia	100	0	0	portfolio stakes	F - 1.0
Germany	0.72	28.28	71	majority stakes	CD - 0.71
Ghana	0.24	9.6	90.16	majority stakes	C - 0.9
Greece	0	0	100	majority stakes	C - 1.0
Guatemala	100	0	0	portfolio stakes	F - 1.0
Guinea	100	0	0	portfolio stakes	F - 1.0
Guinea-Bissau	100	0	0	portfolio stakes	F - 1.0

State	% in Portfolio Stakes	% in 10-50% Stakes	% in Majority Stakes	Largest Segment	Strategy
Guyana	100	0	0	portfolio stakes	F - 1.0
Haiti	100	0	0	portfolio stakes	F - 1.0
Honduras	100	0	0	portfolio stakes	F - 1.0
Hungary	2.16	0.86	96.98	majority stakes	C - 0.97
Iceland					
India	1.45	36.22	62.33	majority stakes	CD - 0.62
Indonesia	0.04	0.15	99.81	majority stakes	C - 1.0
Iran	0.86	30.06	69.08	majority stakes	CD - 0.69
Iraq	100	0	0	portfolio stakes	F - 1.0
Ireland	0.14	23.41	76.45	majority stakes	CD - 0.76
Israel	8.2	0	91.8	majority stakes	C - 0.92
Italy	8.27	3.42	88.31	majority stakes	CD - 0.88
Jamaica	100	0	0	portfolio stakes	F - 1.0
Japan	7.3	0.09	92.61	majority stakes	C - 0.93
Jordan	23.27	76.73	0	10-50% stakes	M - 0.77
Kazakhstan	0.16	9.77	90.08	majority stakes	C - 0.9
Kenya					
Korea	86.08	1.86	12.05	portfolio stakes	FD - 0.86
Kuwait	40.57	1.93	57.49	majority stakes	CD - 0.57
Kyrgyzstan	100	0	0	portfolio stakes	F - 1.0

Figure A1. Continued

State	% in Portfolio Stakes	% in 10-50% Stakes	% in Majority Stakes	Largest Segment	Strategy
Latvia	0	0	100	majority stakes	C - 1.0
Lebanon	100	0	0	portfolio stakes	F - 1.0
Lesotho	100	0	0	portfolio stakes	F - 1.0
Liberia	100	0	0	portfolio stakes	F - 1.0
Libya	3.79	1.52	94.69	majority stakes	C - 0.95
Liechtenstein	9.02	0.14	90.84	majority stakes	C - 0.91
Luxembourg	98.13	0	1.87	portfolio stakes	F - 0.98
Macao	100	0	0	portfolio stakes	F - 1.0
Macedonia (FYR)	100	0	0	portfolio stakes	F - 1.0
Madagascar	100	0	0	portfolio stakes	F - 1.0
Malawi	100	0	0	portfolio stakes	F - 1.0
Malaysia	1.1	3.89	95	majority stakes	C - 0.95
Maldives	100	0	0	portfolio stakes	F - 1.0
Mali	100	0	0	portfolio stakes	F - 1.0
Malta	34.63	65.37	0	10-50% stakes	M - 0.65
Mauritania	100	0	0	portfolio stakes	F - 1.0
Mauritius	100	0	0	portfolio stakes	F - 1.0
Mexico	36.18	0	63.82	majority stakes	CD - 0.64
Monaco	100	0	0	portfolio stakes	F - 1.0
Mongolia	100	0	0	portfolio stakes	F - 1.0
Montenegro	0	0	100	majority stakes	C - 1.0
Morocco	100	0	0	portfolio stakes	F - 1.0
Mozambique	100	0	0	portfolio stakes	F - 1.0
Netherlands	4.35	1.94	93.71	majority stakes	C - 0.94
New Zealand	9.74	0	90.26	majority stakes	C - 0.9
Nicaragua	100	0	0	portfolio stakes	F - 1.0
Niger	100	0	0	portfolio stakes	F - 1.0
Nigeria	0	100	0	10-50% stakes	M - 1.0
Norway	92.48	1.31	6.21	portfolio stakes	F - 0.92
Oman	12.24	8.18	79.58	majority stakes	CD - 0.8
Pakistan	58.28	15.95	25.77	portfolio stakes	FD - 0.58
Palestinian Autonomous Areas	100	0	0	portfolio stakes	F - 1.0
Panama	100	0	0	portfolio stakes	F - 1.0
Paraguay	76.72	23.28	0	portfolio stakes	FD - 0.77
Peru	100	0	0	portfolio stakes	F - 1.0
Philippines	100	0	0	portfolio stakes	F - 1.0
Poland	2.37	0	97.63	majority stakes	C - 0.98
Portugal	2.39	1.9	95.7	majority stakes	C - 0.96
Qatar	34.4	56.36	9.23	10-50% stakes	M - 0.56
Romania	100	0	0	portfolio stakes	F - 1.0

Figure A1. Continued

State	% in Portfolio Stakes	% in 10-50% Stakes	% in Majority Stakes	Largest Segment	Strategy
Russia	0.12	5.11	94.77	majority stakes	C - 0.95
Rwanda	100	0	0	portfolio stakes	F - 1.0
São Tomé and Príncipe	100	0	0	portfolio stakes	F - 1.0
Saudi Arabia	10.45	9.15	80.4	majority stakes	CD - 0.8
Senegal	100	0	0	portfolio stakes	F - 1.0
Serbia	2.77	2	95.22	majority stakes	C - 0.95
Seychelles	100	0	0	portfolio stakes	F - 1.0
Sierra Leone	100	0	0	portfolio stakes	F - 1.0
Singapore	47.41	17.56	35.04	portfolio stakes	MF - 0.47
Slovak Rep.	1.46	2.23	96.31	majority stakes	C - 0.96
Slovenia	3.55	1.81	94.63	majority stakes	C - 0.95
Somalia	100	0	0	portfolio stakes	F - 1.0
South Africa	37.34	62.09	0.57	10-50% stakes	M - 0.62
Spain	96.06	1.14	2.8	portfolio stakes	F - 0.96
Sri Lanka	100	0	0	portfolio stakes	F - 1.0
Sudan	100	0	0	portfolio stakes	F - 1.0
Suriname	100	0	0	portfolio stakes	F - 1.0
Swaziland	100	0	0	portfolio stakes	F - 1.0
Sweden	37.82	1.32	60.86	majority stakes	CD - 0.61
Switzerland	29.28	6.01	64.71	majority stakes	CD - 0.65

State	% in Portfolio Stakes	% in 10-50% Stakes	% in Majority Stakes	Largest Segment	Strategy
Syria	29	0	71	majority stakes	CD - 0.71
Tajikistan	100	0	0	portfolio stakes	F - 1.0
Tanzania	100	0	0	portfolio stakes	F - 1.0
Thailand	0.03	0.48	99.48	majority stakes	C - 0.99
Togo	100	0	0	portfolio stakes	F - 1.0
Trinidad and Tobago	100	0	0	portfolio stakes	F - 1.0
Tunisia	0.25	27.06	72.69	majority stakes	CD - 0.73
Turkey	100	0	0	portfolio stakes	F - 1.0
Turkmenistan	100	0	0	portfolio stakes	F - 1.0
Uganda	15.6	84.4	0	10-50% stakes	M - 0.84
Ukraine	0	100	0	10-50% stakes	M - 1.0
United Arab Emirates	10.22	16.34	73.44	majority stakes	CD - 0.73
United Kingdom	46.26	7.3	46.44	majority stakes	MC - 0.46
United States	100	0	0	portfolio stakes	F - 1.0
Uruguay	48.08	4.87	47.05	portfolio stakes	MF - 0.48
Uzbekistan	100	0	0	portfolio stakes	F - 1.0
Venezulea	4.19	0	95.81	majority stakes	C - 0.96
Vietnam	0.12	0	99.88	majority stakes	C - 1.0
Yemen	100	0	0	portfolio stakes	F - 1.0
Zambia	100	0	0	portfolio stakes	F - 1.0

Figure A1. Continued

State	% in Portfolio Stakes	% in 10-50% Stakes	% in Majority Stakes	Largest Segment	Strategy
Zimbabwe	100	0	0	portfolio stakes	F - 1.0

Explanation:

Each category ("% in...") indicates the percentage of the total transnational state capital of a state is located in the respective ownership segment.	Based on the respective distribution, we assign each state a strategy (Column "Strategy"). See below for the description of those strategies.

Legend for "Strategy":

Code	Strategy	Threshold	Indicator (no. after code)
F	financial	>=90% in portfolio segment	how much is located in portfolio segment
FD	dominantly financial	<90% and >=50% in portfolio segment	how much is located in portfolio segment
MF	mixed financial	no absolute majority, but relative majority in portfolio Segment	how much is located in portfolio segment
M	mixed control	relative or absolute majority in 10-50,01%-segment	how much is located in 10-50.01%-segment
MC	mixed control	no absolute majority, but relative majority in control Segment	how much is located in control Segment
CD	dominantly control	<90% and >=50% in majority segment	how much is located in control Segment
C	control	>=90% in majority segment	how much is located in control segment

Figure A1. Continued

transnational state capital was located (column 'largest segment' in the table). Depending on the percentage of transnational state capital that was allocated in the segment (see Table 3 for the classification) we assigned a specific strategy to the state. The 'Strategy'-column entails these, including the share of transnational state capital located in the largest segment. The table reads as follows: China, for example, embraces a dominantly control (CD) strategy and has 87% (0.87) of its total transnational state capital located in majority stakes. The whole csv-table can be found under https://osf.io/fm6a9/.

Information on sender/target distinction and in/outflows for all states in the sample

We created a table that includes information on whether a state is a sender, target or sender-target according to the criteria described in the article (see Section 5) (Figure A2). We first created the in-to outflow ratio of state capital, and took the binary logarithm in order to maintain the proportion – in logarithmic scale, the ratios 1:2 (0.5) and 2:1 (2) become −1 and 1, and are equally close to 0. We classify senders as those states with a ratio lower than −1 (the outflow is at least twice larger than the inflow) and targets as those states with ratios higher than 1 (the inflow is at least twice larger than the outflow). Everything in between means that a state is a sender-target: its inflow (or outflow) is less than two times larger than the outflow (or inflow). For more information and the whole csv-table check our online repository under https://osf.io/fm6a9/.

State	Inflow State Capital (USD bn.)	Outflow State Capital (USD bn.)	Ratio in-to Outflow (log2)	Type
Afghanistan	0	<=0.01	-inf	sender
Albania	0.03	<=0.01	8.36	target
Algeria	0.94	4.02	-2.09	sender
Angola	0.2	3.79	-4.27	sender
Antigua and Barbuda	<=0.01	0	inf	target
Armenia	0.04	0	inf	target
Argentina	1.42	0.46	1.61	target
Australia	109.79	2.61	5.4	target
Austria	30.95	6.85	2.18	target
Azerbaijan	0.02	28.88	-10.51	sender
Bahamas	0	<=0.01	-inf	sender
Bahrein	2.89	0.63	2.2	target
Bangladesh	0.88	0.02	5.76	target
Barbados	0	<=0.01	-inf	sender
Belarus	3.52	0.08	5.49	target
Belgium	13.64	9.75	0.48	sender-target
Belize	0	<=0.01	-inf	sender
Benin	0	<=0.01	-inf	sender
Bermuda	49.74	0	inf	target
Bhutan	<=0.01	0	inf	target

State	Inflow State Capital (USD bn.)	Outflow State Capital (USD bn.)	Ratio in-to Outflow (log2)	Type
Bolivia	0.15	0.03	2.43	target
Bosnia and Herzegovina	0.5	0.02	4.46	target
Botswana	<=0.01	<=0.01	4.87	target
Brazil	36.88	22.62	0.7	sender-target
British Virgin Islands	21.97	0	inf	target
Brunei Darussalam	0	<=0.01	-inf	sender
Bulgaria	2.43	<=0.01	8.53	target
Burkina Faso	0.13	<=0.01	3.43	target
Burundi	<=0.01	<=0.01	1.6	target
Cambodia	0.04	0	inf	target
Cameroon	0.02	<=0.01	2.92	target
Canada	26.74	78.87	-1.56	sender
Cape Verde	0.06	<=0.01	13.6	target
Cayman Islands	9.14	0	inf	target
Central African Rep.	0	<=0.01	-inf	sender
Chad	0	<=0.01	-inf	sender
Chile	1.14	1.49	-0.39	sender-target
China	51.61	448.66	-3.12	sender
Colombia	0.62	5.48	-3.14	sender
Comoros	0	<=0.01	-inf	sender

Figure A2. Sender/target distinction and in/outflows for all states in the sample. For the editable csv-file see https://osf.io/fm6a9/.

State	Inflow State Capital (USD bn.)	Outflow State Capital (USD bn.)	Ratio in-to Outflow (log2)	Type
Congo	<=0.01	<=0.01	4.61	target
Costa Rica	<=0.01	0.06	-3.85	sender
Côte d'Ivoire	<=0.01	<=0.01	1.95	target
Croatia	1.23	0.17	2.87	target
Cuba	0	<=0.01	-inf	sender
Curacao	0.56	0	inf	target
Cyprus	15.49	0.08	7.58	target
Czech Rep.	2.3	4.05	-0.82	sender-target
Denmark	11.84	9.63	0.3	sender-target
Djibouti	0	<=0.01	-inf	sender
Dominican Rep.	0	0.02	-inf	sender
DR Congo	<=0.01	<=0.01	1.08	target
Ecuador	1.15	0.02	5.97	target
Egypt	1.37	0.21	2.71	target
El Salvador	0.2	<=0.01	3.91	target
Equatorial Guinea	0	<=0.01	-inf	sender
Estonia	0.71	0.07	3.24	target
Ethiopia	0	<=0.01	-inf	sender
Finland	4.4	11.62	-1.4	sender
France	78.09	159.82	-1.03	sender

State	Inflow State Capital (USD bn.)	Outflow State Capital (USD bn.)	Ratio in-to Outflow (log2)	Type
Gabon	0	<=0.01	-inf	sender
Gambia	<=0.01	<=0.01	-6.76	sender
Georgia	0.03	0	inf	target
Germany	324.62	30.41	3.42	target
Ghana	0.05	0.02	1.53	target
Gibraltar	0.07	0	inf	target
Greece	1.31	0.07	4.3	target
Guatemala	0	0.02	-inf	sender
Guernsey	0.14	0	inf	target
Guinea	0	<=0.01	-inf	sender
Guinea-Bissau	0	<=0.01	-inf	sender
Guyana	0	<=0.01	-inf	sender
Haiti	0	<=0.01	-inf	sender
Honduras	0	<=0.01	-inf	sender
Hungary	3.37	0.44	2.95	target
Iceland	0.03	0	inf	target
India	38.87	3.87	3.33	target
Indonesia	5.82	33.84	-2.54	sender
Iran	0	2.62	-inf	sender
Iraq	0.38	0.03	3.5	target

Figure A2. Continued

State	Inflow State Capital (USD bn.)	Outflow State Capital (USD bn.)	Ratio in-to Outflow (log2)	Type
Ireland	10.08	1.99	2.34	target
Isle of Man	0.26	0	inf	target
Israel	3.47	0.06	5.89	target
Italy	97.5	12.02	3.02	target
Jamaica	0.29	0.02	4.05	target
Japan	94.94	38	1.32	target
Jersey	24.44	0	inf	target
Jordan	0.52	<=0.01	5.28	target
Kazakhstan	2.51	15.03	-2.58	sender
Kenya	0.38	0	inf	target
Korea	36.65	20.95	0.81	sender-target
Kuwait	1.26	65.34	-5.57	sender
Kyrgyzstan	<=0.01	<=0.01	3.71	target
Laos	0.03	0	inf	target
Latvia	0.75	0.13	2.58	target
Lebanon	0.19	<=0.01	7.56	target
Lesotho	0	<=0.01	-inf	sender
Liberia	0	<=0.01	-inf	sender
Libya	0.06	32.01	-9.12	sender
Liechtenstein	0.04	1.08	-4.93	sender

State	Inflow State Capital (USD bn.)	Outflow State Capital (USD bn.)	Ratio in-to Outflow (log2)	Type
Lithuania	0.41	0	inf	target
Luxembourg	8.5	0.74	3.53	target
Macedonia (FYR)	0.5	<=0.01	9.66	target
Macao	0.68	<=0.01	7.17	target
Madagascar	0	<=0.01	-inf	sender
Malaysia	10.51	24.45	-1.22	sender
Maldives	0	<=0.01	-inf	sender
Mali	3.91	<=0.01	9.13	target
Malta	27.28	<=0.01	11.37	target
Marshall Islands	0.04	0	inf	target
Mauritania	0	<=0.01	-inf	sender
Mauritius	0.16	<=0.01	7.99	target
Mexico	1.59	0.61	1.39	target
Moldova	0.2	0	inf	target
Monaco	0.13	0.02	2.44	target
Mongolia	0	<=0.01	-inf	sender
Montenegro	0.17	0.25	-0.53	sender-target
Morocco	2.94	<=0.01	9.94	target
Mozambique	0.13	<=0.01	8.99	target
Nepal	0.03	0	inf	target

Figure A2. Continued

State	Inflow State Capital (USD bn.)	Outflow State Capital (USD bn.)	Ratio in-to Outflow (log2)	Type
Netherlands	176.75	41.52	2.09	target
New Zealand	4.74	1.55	1.61	target
Nicaragua	0	<=0.01	-inf	sender
Niger	0	<=0.01	-inf	sender
Nigeria	0.13	0.03	2.3	target
Norway	7.94	500.73	-5.98	sender
Oman	0.93	7.62	-3.03	sender
Pakistan	1	0.09	3.48	target
Palestinian Autonomous Areas	0.08	<=0.01	8.16	target
Panama	0.5	<=0.01	5.22	target
Papua New Guinea	1	0	inf	target
Paraguay	0	0.02	-inf	sender
Peru	3.09	0.05	6.08	target
Philippines	3.24	<=0.01	7.95	target
Poland	5.78	1.01	2.52	target
Portugal	19.91	0.99	4.33	target
Qatar	1.26	111.98	-6.47	sender
Romania	6.32	<=0.01	11.74	target
Russia	14.46	126.09	-3.12	sender
Rwanda	0	<=0.01	-inf	sender

State	Inflow State Capital (USD bn.)	Outflow State Capital (USD bn.)	Ratio in-to Outflow (log2)	Type
São Tomé and Príncipe	0	<=0.01	-inf	sender
Saudi Arabia	1.53	82.65	-5.75	sender
Senegal	0.1	<=0.01	4	target
Serbia	2.88	0.27	3.41	target
Seychelles	0.05	<=0.01	9.39	target
Sierra Leone	0	<=0.01	-inf	sender
Singapore	219.28	143.09	0.62	sender-target
Slovak Rep.	1.08	0.15	2.87	target
Slovenia	1.18	0.71	0.72	sender-target
Somalia	0	<=0.01	-inf	sender
South Africa	7.38	8.39	-0.18	sender-target
Spain	79.88	3.2	4.64	target
Sri Lanka	0.55	<=0.01	13.27	target
Sudan	<=0.01	0.02	-3.56	sender
Suriname	0	<=0.01	-inf	sender
Swaziland	0.02	<=0.01	8.62	target
Sweden	27.46	81.94	-1.58	sender
Switzerland	50.33	11.24	2.16	target
Syria	0.14	<=0.01	3.27	target
Taiwan	27.58	0	inf	target

Figure A2. Continued

State	Inflow State Capital (USD bn.)	Outflow State Capital (USD bn.)	Ratio in-to Outflow (log2)	Type
Tajikistan	0	<=0.01	-inf	sender
Tanzania	0.05	<=0.01	4.39	target
Thailand	8.58	8.15	0.07	sender-target
Togo	0.55	<=0.01	6.92	target
Trinidad and Tobago	0	<=0.01	-inf	sender
Tunisia	0.05	0.29	-2.68	sender
Turkey	6.18	0.03	7.58	target
Turkmenistan	0	<=0.01	-inf	sender
Uganda	0.06	<=0.01	3.89	target
Ukraine	1.98	0.02	6.99	target
United Arab Emirates	0.31	135.79	-8.77	sender
United Kingdom	275.90	7.86	5.1	target
United States	238.34	21.36	3.48	target
Uruguay	2.32	0.08	4.78	target
Uzbekistan	0.03	<=0.01	7.45	target
Venezuela	0	2.61	-inf	sender
Vietnam	0.83	0.3	1.47	target
Yemen	0	<=0.01	-inf	sender
Zambia	1.14	<=0.01	7.44	target
Zimbabwe	0.05	<=0.01	4.63	target

Explanation:

A state is a sender if the outflow of state capital is significantly higher than its inflow. It is a target if the opposite is true and a sender-target, if both in-and outflow are on a similar level

We took the binary logarithm of the ratio to better represent the differences between the different types. The further away a ratio from 0 is, the larger the difference between their in-and outflow: if it is a positive number, the inflow is higher than the outflow. If it is negative, the outflow is higher. If the ratio is between -1 and 0 it means that the outflow is less than double the inflow. If it is between 0 and 1, it means that the inflow is less than double the outflow. Here we speak of sender-targets.

"inf" and "-inf" indicate that either the outflow (first case) or the inflow (second case) was zero and the ratio (i.e. division of in-and ouflow) is mathematically an infinitive number.

Sender: Ratio is < -1

Target: Ratio is >1

Sender-Target: Ratio is between -1 and 1

Figure A2. Continued

Visualization of the data

Besides the network visualization (Figure 6), we also produced a geographical visualization of state capital in-and outflows around the world. The interactive map can be found here: https://bl.ocks.org/jgarciab/raw/f248418d6069f0543a8a5f4002e29601/37b9396a36c3824f171215802739569a2f1fa574/.

It is possible to choose between in-and outflows as well as between states as owners. The following snapshot shows the spread of Chinese transnational state capital around the world (Figure A3).

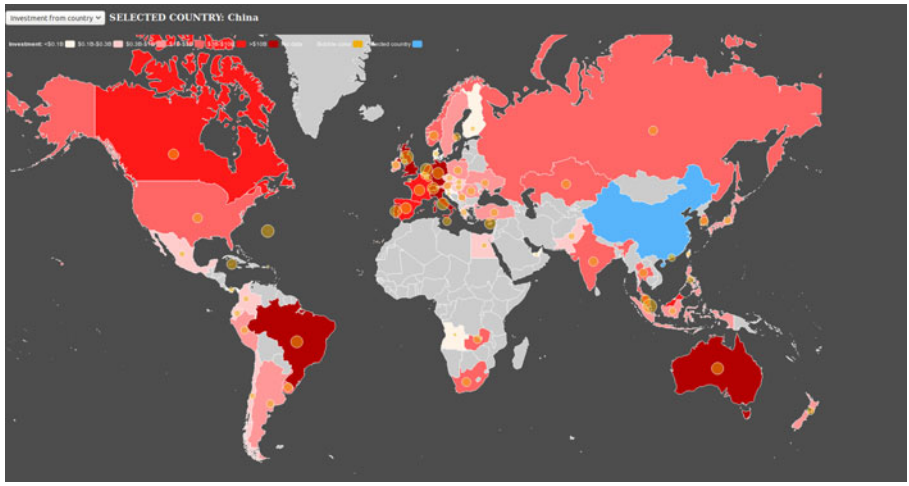

Figure A3. The global spread of Chinese transnational state capital. Here, China is selected as an owner and the target states of its transnational state capital are colored. The darker a state is, the more Chinese state capital it receives. Since the visualization is interactive, we created a screenshot here and make the visualization accessible via this link: https://bl.ocks.org/jgarciab/raw/f248418d6069f0543a8a5f4002e29601/37b9396a36c3824f171215802739569a2f1fa574/. It can be switched between in- and outflow of state capital and respectively between the different senders and targets.

Further robustness and data quality checks

Testing of further target firm size indicators

We use operating revenue as an indicator of the size or relevance of a target firm. In this article, we argued that this indicator is both, theoretically intuitive and in accordance with existing studies using the same measure. Out of the two other most common measures for firm size – assets and market capitalization (see Dang, Li, & Yang, 2018) – we had to rule out the latter since our sample includes also non-listed firms. We furthermore tested the former as an alternative indicator to prove the robustness of our measure.

When testing for assets as an indicator of firm size, we find that the overall picture does not change considerably (Figures A4 and A5). In the top 10 of state capital senders we see Germany and the UK instead of the UAE and Canada (part 1 of Figure A4). In the top 10 of state capital targets we see that Italy, Spain and France are replaced by Ireland, China and Turkey (part 2 of Figure A4). On both sides, we see that the prevalence of financial firms (banks or other financial firms) causes the changes (e.g. the UK is a hub for global financial firms; the largest foreign-state-owned German firm is DEPFA Bank plc, a subsidiary of the state-owned Hypo Real Estate; the first ten firms in the Turkish case are Banks if assets are used as indicator). We also see that the relative composition of the different ownership profiles changes, but not as strong as to produce totally different strategic profiles (part 3 of Figure A4): the most significant changes occur again in the case of Germany caused by the ownership of large financial institutions abroad.

From our previous usage of the Orbis data we saw that a focus on assets inflates the size of financial firms versus other industries disproportionately and we also find this effect in our sample. With revenues, the ratio of the number of non-financial to financial firms is 3.8 (financial firms represent 21% of the whole sample), while the ratio of the value (i.e. state capital) between both is 5.5. With assets, the ratio of the number of firms is even 5.5 (financial firms represent 15% of the whole sample), while the ratio of the calculated value drops to 0.6. This means that a focus on assets inflates the value (or size, for that matter) of financial firms disproportionately. Figure A5, which is a replication of Figure 7 using assets as an indicator, underpins this. Targets whose inflows are substantially increasing when assets are used as firm size indicator have mainly higher inflows into banks or financial firms: the top 10 inflow targets of the UK and South Africa are banks and financial firms and in the Irish case this number is eight out of ten. On the other

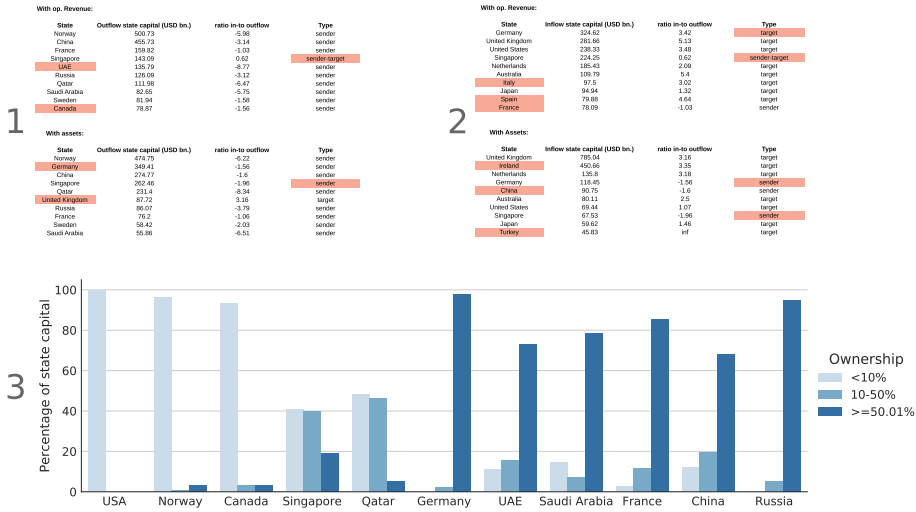

Figure A4. The reported changes when assets are used as firm size indicator instead of operating revenue. Part 1 of the figure reports the top 10 senders for the different indicators and part 2 the different targets. Part 3 is a replication of Figure 3 with assets as the indicator.

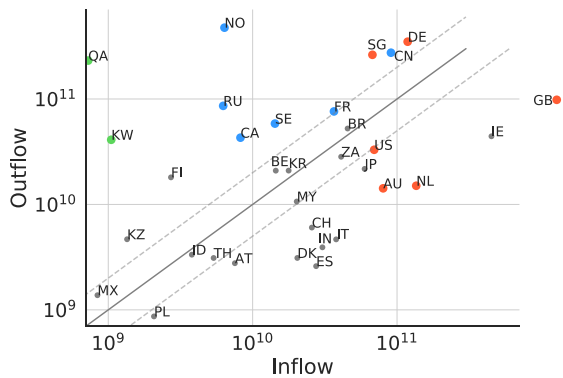

Figure A5. Replication of Figure 7 with assets as the firm size indicator. The colors of the different groups from Figure 7 were kept in order to locate the differences.

side, states with high investments into financial firms substantially increase their outflows, as the examples of Germany and Singapore (now both senders of state capital) show.

For these reasons, we believe that a focus on operating revenue as a proxy for the value or size of a foreign state-owned firm is appropriate and delivers the most adequate solution to our theoretical notions.

Testing for different thresholds for ascribing corporate control

We used the cutoff of 50.01% of ownership stakes to account for state control of an invested firm. As described in the article, this a very conservative cutoff, also given that the relevant literature often uses lower thresholds such as 20% (Claessens et al., 2000). As the robustness-test with the 20%-threshold we performed on our data shows, this change of thresholds does not distort our overall results (Figure A6):

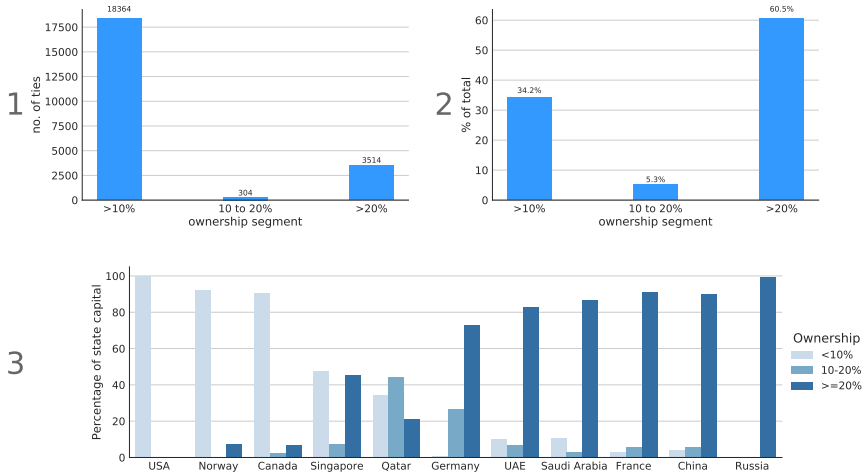

Figure A6. The reported changes when a 20% threshold for control strategies is used instead of 50.01%. Part 1 of the figure is a replication of Figure 3, part 2 a replication of Figure 4 and part 3 a replication of Figure 5 with the new threshold.

One of the reasons for this might be that the number of cases between the 20% and 50.01% – thresholds is relatively low (about 2% of the total number of ownership ties and about 4% of the total amount of state capital). Hence, counting a fraction of this value (from 20-50.01%) as controlling investment does not have a substantive distortive effect on the overall picture. It can also be added that a 20% – threshold (or even lower) would be theoretically problematic for our sample, since we do not only include publicly, but also privately owned firms, where controlling owners usually own 50.01% of a firm and more.

Improving data quality

We used different thresholds and cleaning steps in order to ensure a high data quality that allows us to draw descriptive inferences from our data analysis (see the descriptions in the article as well as in this appendix). In order to eliminate the possibility of missing large outward investment chunks, we constructed a second, similar dataset with data that is one year older (December 2016) than the one used in the article (December 2017). We used this historical account to check for missing data in our current dataset. This potential gap can have a variety of reasons, e.g. M&A transactions that took place at the time of collecting the data and hence were not recorded properly; a change in a firm's holding structure that led to changed but not updated firm identifiers and so on. The result would be the same, namely missing data.

When comparing the changes in both datasets, we find a total difference of 257 bn. USD in state capital, which equates to about 11% of total state capital. We count all cases where either an ownership relation is present in one of the datasets and missing in the other or where there is a difference in the amount of state capital invested. In order to check whether this difference is due to errors in our dataset (i.e. not or wrongly reported data), we analyze all cases by hand, where the difference in invested state capital is equal to or higher than 1 bn. USD. This threshold is useful for three reasons: first, changes of ownership relations on the scale of at least 1 bn. USD are likely to influence the overall results significantly and should thus be checked. Second, it reduces the amount of cases significantly from 5684 to a manageable 43. Third, those remaining 43 cases account for slightly more than half of the changes in both datasets (130 bn. USD or about 6% compared to the total state capital). Hence, a thorough analysis of those 43 cases gives us an appropriate method of checking for possible sources of error.

The analysis shows that out of the 43 cases, only six (i.e. about 14%) show definitely wrong or missing data. If this would be extrapolated to the whole sample, we would end up with 1.5% wrongly reported or missing data. We fixed those six cases in the data and came up with possible and likely explanations for the missing datapoints (Table A1).

Table A1. Description of corrected entries after data quality check (see Appendix).

Description of data error	Possible explanation
Kuwait (KW) has a stake in BP P.L.C that does not appear in our current data (0.18% stake),	We detected a BvD ID change between the historical data and the current Orbis Interface data, which might have caused this missing datapoint.
France (FR) has a long-standing stake in Airbus SE (11.25%) that was reduced in our data to 0.15.	France owns this stake via a holding company (SOGEPA) and we find that this holding company was not identified as being state-owned in our data (although the ownership relation with Airbus is present). This might be due to a change in the holding or ownership structures that was not reported in the Orbis data on time.
China (CN) owns a Shandong Energy subsidiary in Singapore fully that was not reported in our data.	The ultimate owner of the subsidiary is an entity on which Orbis has no information, so it cannot be identified automatically as state-owned. This might be due to an internal restructuring that has taken place meanwhile.
Arab Emirates (AE) own a Dragon Oil subsidiary in Malta fully which was not reported in our data.	We saw this ownership relation in our data, but the owner was identified with 'YY', which is unknown. As reported in the data cleaning (Appendix), we drop those unknown owners. It is hence a change in the BvD ID that caused this error.
China (CN) owns an Adama Agricultural Solutions Ltd./ ChemChina subsidiary in Israel fully, which was not reported in our data.	ChemChina acquired Adama in 2016 and then merged it with Hubei Sanonda in mid-2017. This and a BvD ID change for ChemChina caused potentially the missing datapoint.
China (CN) owns a subsidiary of Baowu Steel Group in Singapore fully.	Baosteel and Wuhan Iron and Steel Corporation merged in December 2016 and were renamed to China Baowu Steel Group. Orbis did not take that into account in time and the Baosteel subsidiary dropped out of the data.

We also checked the remaining other half of changes in the dataset regarding the distribution of those changes (in amount of state capital). This means we aggregated the remaining changes on the state level and looked for cases that showed large differences or unexpected values compared to the overall results of our article. We only found one case (New Zealand) where this was the case and the remaining differences, if all due to error, might affect the overall results (i.e. would change the position of New Zealand significantly in the overall ranking). In the case of New Zealand we however know that the Australian subsidiaries of a large firm (Fletcher Building Limited) were wrongly associated as being state-owned by New Zealand in the historical data. Our manual check of the differences confirms this: only three minor cases where foreign state capital from New Zealand was invested in Australia and where those investments are not associated with Fletcher Building Limited are different in the two datasets. This ensures us that the remaining differences in the data are not disproportionately affecting smaller states and we can thus dismiss them as a potential source of systematic error.

Given our checks and the distribution of the remaining part of the differences between both datasets, we remain confident in the quality of our data. After all, fluctuations in operating revenue and ownership stakes are perfectly normal over time; and those fluctuations account for around 69% of the total state capital difference between both datasets (i.e. only the remaining 31% are due to missing values in one of the datasets).