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But since then, no apparent progress has been made. From the geopolitical point of view, the heightened tensions between the US and China have caused disruptions. In the negotiations between the EU and China to conclude the Comprehensive Agreement on Investment, the idea of introducing competitive neutrality as a yardstick to evaluate the degree of distortion introduced by SOEs does not appear. It is hard to know if the apparent lack of interest in this concept from China's side re ects the current limited will to implement SOE reform or the lack of straightforward ways to carry out such reform, or even the notion in Chinese policy circles that the concept is too Western for any application to the reality of China's economic system. In any event, whether and how China tackles the uneven playing eld in its huge market is important not only for China and the companies operating there but also for the rest of the world.

In this Policy Contribution, we review the concept of competitive neutrality and how it may apply to China. We also provide a workable methodology and apply it to di erent sectors in China. Finally, we draw conclusions on the relative size and type of distortions and o er some ways forward.

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e concept of competitive neutrality is underpinned by the idea that resources need to be used e ectively within the economy to achieve growth and development. One of the obstacles to achieving competitive neutrality is policies favouring state-owned enterprises over usually more-e cient private rms.

In 2004, the OECD started the rst in-depth discussion on how the role of the government a ects the way markets function. e public sector may, through subsidies and skewed government procurement rules, enjoy nancial advantages over private rms (OECD, 2004). Competitive neutrality would ensure that private and public enterprises operate under the same rules and conditions and thus compete on an equal footing. If they don't, di erences should at least be measured so action can be taken to iron out such di erences through appropriate policies (OECD, 2009). e idea should then be formalised into national practices and regulation to ensure the level playing eld (OECD, 2012). While the meaning of competitive neutrality is clear, measurement of it is less obvious considering the realities in di erent countries and access to data (OECD, 2012; UNCTAD, 2014).

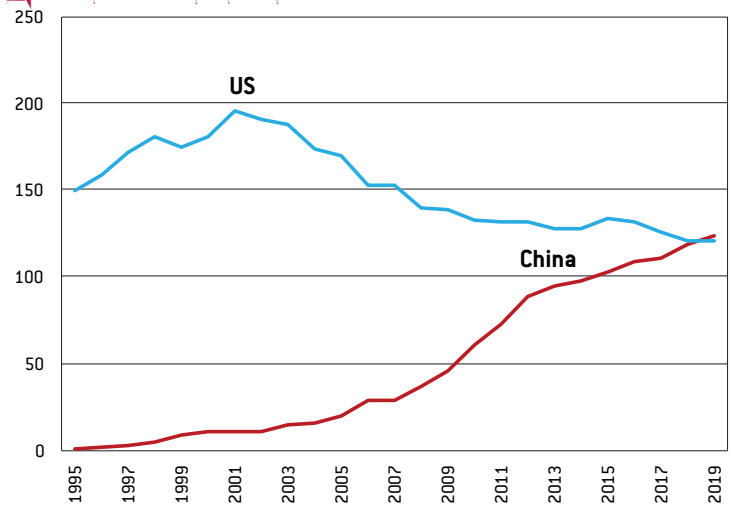
Several countries have taken steps to implement competitive neutrality. A frontrunner is Australia, which underwent a comprehensive reform of the role of the state in the economy in 1990s. Starting from the *Hilmer Report* in 1993, Australia created the environment to inject greater competition into its markets (Commonwealth of Australia, 1993). e framework relied heavily on *ex-ante* components, namely policies governing the operation of state-owned enterprises which gave them an arm's length relationship to government (Brennan, 2019). e key aspects are maintaining neutrality in terms of regulation, debt and tax, while ensuring SOEs achieve commercial rates of return and that loss-making institutions exit the market.

For example, payments should be made to the national treasury as compensation for any regulatory or nancial advantages. Australia's Productivity Commission ensures the macro goals are ful lled through general reporting and communication and the micro targets can be met with exibility based on sectorial divergence and constraints (Rennie and Lindsay, 2011; Brennan, 2019).

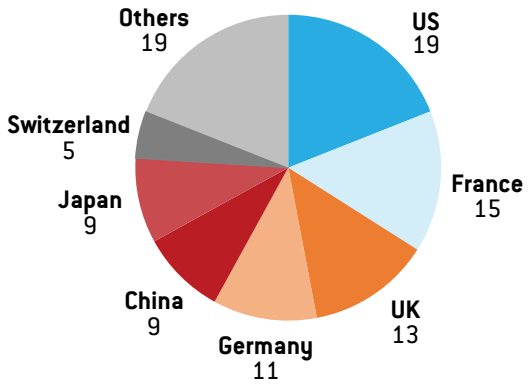
Competitive neutrality is of course di erent from full- edged privatisation. In Sweden, for example, the government still has signi cant corporate holdings, but the concept of competitive neutrality is used to ensure equality among companies and the necessary degree of transparency (Östros, 2019).

While progress has been made in the past few decades on competitive neutrality in developed economies, the state share of the production of goods and services continues to be larger in emerging markets and especially those in transition (OECD, 2017; EBRD, 2020). China clearly stands out. Its state-owned enterprises were valued at $29 trillion and employed some 20 million people in 2017 (OECD, 2017). Given China's sheer size, a move towards competitive neutrality in China would be signi cant for both its own development and for the world.

China's potential growth has been decelerating for years and this is bound to continue, pushed by an aging population and decelerating productivity. is calls for more-e cient use of resources. SOEs are less productive and less pro table than other rms, which implies that better resource allocation needs to be centred on the way SOEs are run. In other words, the need for SOE reform in China seems clear (Brennan, 2019). Given that Chinese rms are now the largest in the world, dominating the league table of the Fortune 500, reform of Chinese SOEs will be globally important (Figures 1 and 2).

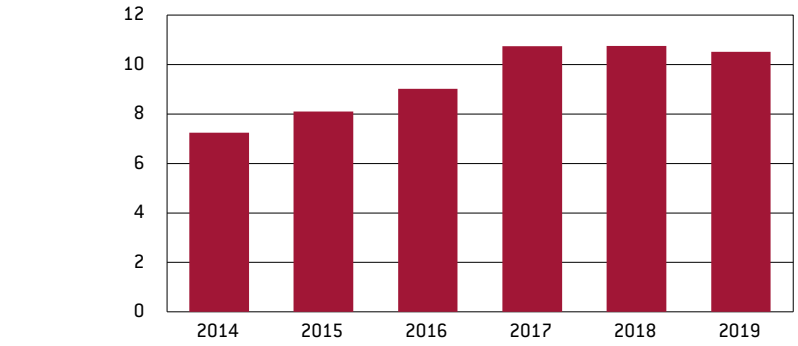


Source: Bruegel.

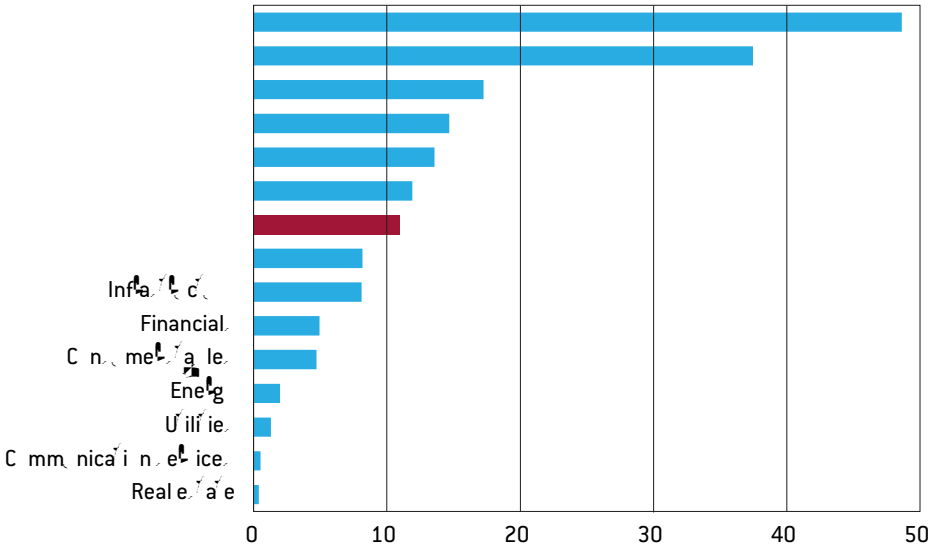


Source: Bruegel based on UNCTAD.

e global importance of pursuing a level playing eld in China can be understood from the increasingly large share of the revenues of Chinese companies that come from overseas (Figure 3). From a sectoral perspective, semiconductors and information technology have the largest shares of overseas revenues (Figure 4).



Source: Bruegel based on financial statements, WIND. Note: coverage = largest 3000 Chinese onshore listed companies.



Source: Bruegel based on financial statements, WIND. Note: coverage = largest 3000 Chinese onshore listed companies.

Furthermore, China's strategy of 'dual circulation', which is central to the new Five Year Plan (2021-2025) emphasises 'internal circulation', or local production to achieve self-su - ciency in technology (García Herrero, 2020). At the same time, however, 'external circulation,' which is focused on exports, should support internal circulation. is signals that China wants to reduce the role of international trade in its economy and strengthen its domestic economy. But this does not mean China will be completely detached from the world. Rather, it equates to a 'hedged integration' to protect the economy from external volatility, while bene tting from selling into overseas markets. erefore, European rms are likely to face tougher competition in China without a level playing eld.

Beyond corporate revenue and foreign assets, Chinese rms are also in uencing the global competitive environment through outward foreign direct investment, including mergers and acquisitions (M&A). is remains very important for the world even though the

pace of Chinese FDI has slowed down recently partly as a consequence of stricter screening, especially in the west. ere is also less appetite from Chinese companies in the context of a plummeting global economy (Figure 5). Europe has long been a popular target for Chinese

concept of competitive neutrality. e concept has two main aspects: rst to charge prices that fully re ect costs (or in other words to control for a minimum degree of pro tability of SOEs) and, second, to ensure neutrality in terms of tax, debt and regulation (Brennan, 2019). From an international perspective, the IMF (2020) o ered general principles to ensure a level playing eld between SOEs and private rms. In addition, several international organisations have published guidelines, including the OECD and the World Trade Organisation.

But this still leaves the question of how to measure competitive neutrality. Although the OECD provides guidance for policymakers in terms of creating the level playing eld, it does not address a core problem of how to measure and compare competitive neutrality in di erent countries or sectors. For China, the huge share of loss-making SOEs, low returns on commercial investment and the misallocation of credit are all signs of the lack of competitive neutrality (Lardy, 2019).

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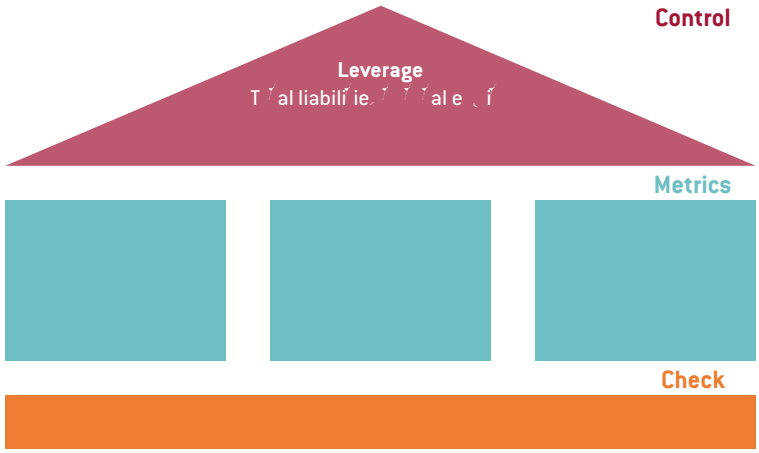
We provide a preliminary measure of the lack of competitive neutrality for Chinese SOEs.

ere are many ways in which SOEs can gain advantages over private rms. IMF (2019) described competitive neutrality in nancing with regulatory neutrality and debt neutrality in a framework which can be further divided into implicit guarantees, equity nancing and credit terms. However, it is di cult to quantity the impact of such bene ts. SOEs also bene t from government subsidies. Although direct subsidies can be estimated from the nancial statements of listed rms, subsidies can also be handed out in various forms in largely state-owned and national strategic sectors. For example, in China the government has subsidised households that switch from coal to gas or electricity, a measure that can indirectly boost revenues for utilities. However, the bene ts for companies, especially in the context of interlaced relationships between SOEs and provincial governments, may not be re ected in nancial statements. In addition, rms may not be obligated to pay full dividends to state shareholders. at said, subsidies can vary between sectors and exist in di erent forms, which makes comparison and measurement di cult.

Given the lack of conclusive evidence on the degree of competitive neutrality in the Chinese economy, we developed a data-rich approach to measure monetary and scal support given to companies (Figure 7). We used leverage as a control measure to show the divergence in leverage for SOEs and private companies. e three key metrics that are deemed important are regulatory, debt (ac)rattan. sharalier, it is di cult to quane regulag and



Source: Bruegel.

On the nancial side, the Chinese nancial sector is still largely controlled by the state, meaning that banks and other nancial institutions also play an important role in the competitive environment companies in China face. Commercial banks are the biggest bondholders in China. As a simple measure of debt neutrality, we calculated how low interest payments may be per unit of debt for a certain SOE compared to a private company within a certain sector.

On tax neutrality, the lack of data on subsidies and other types of bene ts prompted us to focus on tax payments, in particular how low the e ective tax rate of a certain SOE might be compared to a private company within a certain sector. A generally lower e ective tax rate for SOEs is an obvious form of nancial support, since it allows companies to retain their earnings and boost returns on assets.

e return on assets is a measurement of the result of the existence or non-existence of comparative neutrality and is an important indicator to assess how e ciently/productively an SOE utilises its resources. If an SOE has received nancial support from the government and its pro tability is high, it may mean that the support has been well-utilised. e opposite means the government support has not translated into an e cient outcome, which means the subsides may be better allocated.

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We set out to measure whether there is competitive neutrality between SOEs and privately-owned enterprises (POEs) in China. Foreign rms are not included as it is hard to argue they will enjoy competitive neutrality with local rms if it does not even exist for SOEs and POEs. Our sample includes the 3,000 largest listed non- nancial Chinese rms by asset size in both the onshore and o shore markets. Asset size is a more solid measure for the real size and importance of companies, as market capitalisation can be volatile and depends on valuation.

e nancial sector has a di erent role in the economy and is beyond the scope of our analysis.

We included not only rms listed on the Shanghai and Shenzhen stock exchanges but

also those listed on overseas venues, including Hong Kong and New York. is extension is essential because some sectors in China, which include huge companies, are heavily dependent on overseas equity nancing, such as real estate developers listed in Hong Kong and technology rms listed in the US. Results purely focusing on the onshore market would mean a big part of rms would be neglected.

Our data shows asset size has ballooned for listed Chinese rms, which con rms the trend that Chinese rms are gaining more in uence in both the domestic market and foreign markets, including the EU (Figure 8). Although the asset size and the share of assets owned by private rms have increased, it does not necessarily mean there is competitive neutrality (Figure 9). Private rms may have grown quicker than SOEs in terms of asset size leading to improved ability to raise funds from the equity market. But most POEs may still need close connections with government to grow, and might not be treated equally to SOEs.

Source: Bruegel based on financial statements, Bloomberg.

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Next, we categorised companies by ownership and sectors. While the line between state-owned and private rms can be blurred in China because many rms have close connections with central or local government, we took the classi cation from WIND[5] om WIND

funding costs, and return on assets by ownership and sector. e leverage ratio is de ned as total liabilities over total equity. e e ective tax rate is calculated as income tax expense to pre-tax income. e average funding cost is the ratio of interest payments to total debt. We then compared the average of each of the ratios for SOEs and private companies in each sector. Signs of the absence of competitive neutrality are lower e ective tax ratios for SOEs and lower funding costs per unit of debt.

In most cases, we calculated an adjusted ratio for POEs excluding real estate. e lack of investment options together with lax mortgage rules have created large property developers in China, generating lucrative returns from quick turnover based on home presales and debt. Such rapid development has helped local governments secure tax revenues from land sales. In other words, while real estate companies are generally POEs (and especially many of the large ones), local governments in particular might consider them strategic, and this skews the overall result.

Our results support the view that China's competitive environment is poor, with conditions tending to favour SOEs. On leverage, POEs nd it harder to borrow money and the gap with SOEs in this respect widened in 2019 (Figure 12, panel A). In previous years, Chinese regulators became more wary of nancial risks and started to deleverage the economy, but progress was paused sometimes because of the need for short-term economic growth. Under this on-and-o deleveraging campaign, the leverage ratio for SOEs remained largely stable at 151 percent in 2019. For the private sector, overall leverage is greater than that of SOEs, but is mainly down to the overwhelming importance of real-estate developers among the largest private companies in China. ese real-estate companies are by far the most leveraged across all sectors. When real estate is excluded, the leverage ratio for POEs declined from 108 percent in 2014 to 100 percent in 2019.

As for the cost of funding, the implicit interest rate on the cost of debt is generally higher for POEs than SOEs (Figure 12, panel B). Between 2015 and 2017, funding costs declined sharply for all rms as the government tried to support growth and ease overcapacity problems, but such lax liquidity conditions have not been felt equally by SOEs and POEs. e latter have su ered from widening funding costs compared to SOEs. e reasons for this are the greater di culty for POEs to access liquidity and the much worse market perception as they cannot count on an implicit guarantee from the government. Even in the most leveraged sector, real estate, private rms still pay more per unit of debt than SOEs.

However, the trend in terms of tax looks di erent. Real estate developers are being heavily taxed, leading to an increase in the overall tax burden for private rms. If we exclude real estate, the e ective tax rate has been consistently lower for private rms than for SOEs (Figure 12, panel C). But the situation has changed since 2018, with POEs starting to pay higher tax rates, closer to the level paid by SOEs.

In addition, the return on assets (ROA) has been higher for private rms than state-owned enterprises until recently (Figure 12, panel D). Part of the reason for this could be the tougher stance towards the real estate sector, but it is also true that the ROA has fallen more sharply for the rest of the private sector. For SOEs, the improvement could be an indicator of a more centralised approach to resource allocation with a stronger focus on SOEs. Decelerating economic growth and geopolitical tensions could have made the Chinese government more convinced of the need to create national champions in di erent elds.

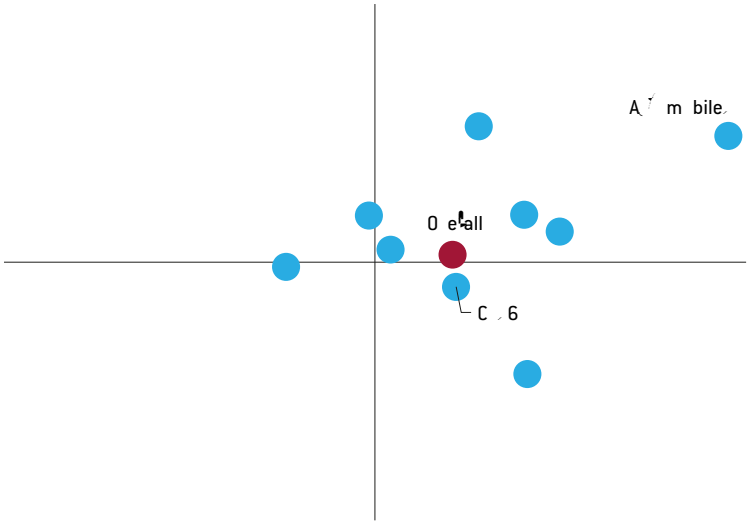
Source: Bruegel based on financial statements, Bloomberg. Notes: Leverage ratio is computed by dividing total liabilities by total equities. Funding cost = interest expense over total debt.

From a sectoral perspective, private rms cannot borrow as much as SOEs in most sectors, as measured by leverage (Figure 13). Real estate continues to be an outlier with an exceptionally high leverage ratio versus state-owned counterparts. However, the situation is worst for renewables, healthcare and ICT – the sectors with relatively high private ownership levels.

In terms of the funding costs and e ective tax ratios for di erent sectors, SOEs tend to pay lower e ective (er)-7 (ms of thoT (s)37w(e o)75hip le)-0.9 (v)2.9 (eP21s)1 (it)3 (ua)7 (tion s)7 (t s)-4 (e)l1r

of green energy, renewables also seem to bene t from a lower tax expense. All of the three sectors have a relatively high private ownership.

On potentially subsidised cost of funding, SOEs seem to have a clear advantage in all



Source: Bruegel.

Source: Bruegel based on financial statements, Bloomberg.

e lack of competitive neutrality in China has signi cant consequences for companies operating in the Chinese market but also beyond. One way to look at the global impact is to look

deal, will require much more than China agreeing to import volume targets. e concept of competitive neutrality, which was high on the list of potential solutions at the beginning of the negotiations and is clearly supported by the IMF, may come to the forefront again.

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