The Potential of Public Employment Reallocation as a Place-Based Policy

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Increasing within-country disparities have led policymakers to deploy public employment reallocation as a place-based policy tool to support struggling regions. This paper surveys the economics literature on capital relocations, purpose-built capitals, and public agency decentralization programs, synthesizing their effects on population, employment, and GDP. I find that while relocating capital cities can spur employment, GDP, and population growth in receiving regions, they entail highly unpredictable costs (3–12% of GDP) and uncertain environmental outcomes. Decentralization programs yield positive short-run public-to-private employment multipliers (around 0.7) stemming from the non-traded sector, but the long-term effect on the traded sector remains ambiguous. Local initial conditions seem to matter more than ex-post spillovers in determining multiplier size. Although more evidence is needed, sending regions do not seem to be extensively harmed when public jobs leave. Given the large share of government payroll in national expenditures, reallocating public employment may hold considerable potential for regional development in the future.

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1 Introduction

Differences in income and productivity between countries remain large. However, differences within countries can be even larger. The main drivers behind these disparities are long-term factors such as globalization, automation, and structural transformation. While these factors have generally contributed to increased national prosperity, their benefits are not uniformly distributed across regions. The spatial concentration of industries, as discussed by Duranton and Overman (2005), Kerr et al. (2010), Koh and Riedel (2014), and Goldman et al. (2019), primarily causes this uneven distribution. Regions that specialize in industries leveraging these structural changes may grow exceptionally. In contrast, regions that do not specialize in such industries may decline and stagnate.

To support struggling regions, policymakers employ a range of place-based policies. Neumark and Simpson (2015) describe place-based policies typically as efforts to target job opportunities and higher wages in a specific area and contrast them with "people-based" policies, such as the Earned Income Tax Credit in the US, that try to help deprived people regardless of where they live or how concentrated they are in space. Examples of place-based policies are public infrastructure, land development, customized business services, and subsidies like tax credits (see Neumark and Simpson (2015) for a complete discussion of place-based policies).

However, classical subsidies entail high costs, and their impact on employment and welfare remains uncertain. Therefore, policymakers are exploring alternative strategies to promote economic development in lagging regions. One approach is the strategic reallocation of public employment. Public employment reallocation programs redistribute public jobs to targeted regions, aligning with the previous definition of place-based policies. These programs bear significant potential to support local economies by leveraging existing public funds. As of 2020, the public wage bill constituted 21% of total public expenditure in the United States and 17% in Germany. In certain developing nations, this figure can be as high as 50-60% of total public expenditure (World Bank 2024). Recognizing the public wage bill as a public investment reveals its position as the largest public investment item in most countries, especially in developing economies. Five out of seven G7 countries—namely Germany, France, Canada, the United Kingdom, and the United States—are either implementing or contemplating programs for reallocating public employment[1] Nevertheless, relocations entail additional expenditures. Governments pursuing reallocation programs must budget for expenses associated with moving personnel, leasing or renovating new facilities, constructing new sites if necessary, maintaining parallel staffing structures during transitional phases, and providing compensation incentives to employees to encourage relocation.

[1]The UK's "Places for Growth" aims to move about 22,000 jobs out of London by 2027 (Government of the United Kingdom 2024). France has been relocating ministries from central Paris since 2019 (Interministerial Directorate for Public Transformation 2022), and Germany is shifting public employment away from Munich and Berlin by 2025–2030 and 2028, respectively (Freitas n.d.; German Bundestag 2020). Canada's Quebec region is similarly decentralizing jobs (Prime Minister 2022). Meanwhile, U.S. President Donald Trump has proposed moving 100,000 employees from Washington, D.C. for political reasons (Olalde 2024).

Apart from the cost-benefit aspects, spatial general equilibrium theory suggests that the efficiency implications of reallocating public employment are not straightforward. We expect that the jobs relocated by the government will create additional jobs in the local private sector due to increased local demand, mainly for local, non-traded goods, leading to an increase in employment in the non-traded sector. However, higher public sector wages and increased housing costs from population growth can squeeze traded sector firms competing at national prices, reducing traded sector employment. The overall impact depends on the trade-off between this positive short-term multiplier effect and the negative long-term general equilibrium effect (Rosen 1979; Roback 1982; Faggio 2019; Becker et al. 2021).

In this chapter, I conduct a comprehensive review of the existing economics literature to verify whether the theoretical stipulations regarding public employment reallocation are corroborated or refuted by empirical evidence. My main research question is, therefore "What is the economic impact of public employment reallocation as a place-based policy on targeted regions in terms of private employment, unemployment, and population growth?" To address this question, my analysis focuses on the one hand on assessing the effects of purpose-built and relocated capital cities and, on the other hand, on decentralization initiatives that shift public employment away from capitals to distressed regions[2].

I find that notable cases of capital relocations where regional development was considered the primary objective include Brazil (1960), Tanzania (1973-present), Malawi (1975), South Korea (2012), and China[3] (2017). In contrast, nations like Pakistan (1959), Côte d'Ivoire (1983), Nigeria (1991), and Kazakhstan (1997) relocated their capital due to ethnic tensions, but maintaned regional development as a secondary objective. Relocating capital cities entails a complex interplay of potential benefits and significant challenges. On the one hand, it can stimulate the local economy in recipient regions, attracting population and fostering growth, particularly in the service sector. This can lead to a revitalization of targeted areas and potentially address regional imbalances. On the other hand, these projects entail highly unpredictable costs which require careful evaluation. On average, new capitals consume 3-12% of GDP, with newer capitals reaching the lower end of this spectrum. Public expenditure connected to new capitals may exert inflationary pressures. Additionally, environmental trade-offs related to construction and resource demands remain unclear. While relocations can shift demographics and attract population to the new capital, their impact on overall national population distribution is often less substantial than anticipated. Capital relocations also may lead to sectoral shifts away from manufacturing in the recipient region. Interestingly, former capitals often demonstrate economic resilience, preserving absolute economic activity and population

[2]This paper concentrates on capital relocations because many artificially created or relocated cities that lack regional or national capital status do not experience large shifts in public employment. For instance, major urban developments in the Gulf such as King Abdullah Economic City (Saudi Arabia) or Lusail (Qatar) add little to the public-sector workforce (Moser et al. 2015). Likewise, studies on prison closures, military base shutdowns (Chirakijja 2023), and new universities' local labor-market effects fall outside this paper's scope.

[3]So far, China's Xiong'an shall become the new principal location for public agencies and state-owned and not a new capital.

growth despite a potential decline in relative national economic importance. Several countries are currently considering capital relocations with the intention of fostering regional development, with the most advanced project being Mongolia's planned move from Ulaanbaatar to "New Kharkhorum City" in the Orkhon Valley. (Rossman 2016; Urban Planning Administration of the New Kharkhorum City 2024).

Since the 1960s, in an effort to decentralize public employment, governments have also opted to move public agencies away from the capital. Initial motivations included cost reduction and congestion relief rather than explicit place-based policy goals. The UK's programs from 1963 to 1993 illustrate this trend. More recent initiatives in countries like South Korea (2011-2018), Sweden (2004-2019), Denmark (2015-2018), Germany (since 2015), and France (since 2019) explicitly target regional development.

The empirical literature reveals two significant directions. First, relocations targeted at specific local labor markets, akin to place-based policies (Jofre-Monseny et al. 2020; Faggio 2019; Lee et al. 2024), generate positive multipliers on private employment, primarily driven by growth in the services sector (an empirical proxy for the non-traded sector in theoretical models). These studies also report negligible or no impact on manufacturing employment (a proxy for the traded sector). Conversely, analyses of changes in the size of the national public sector between censuses (Faggio and Overman 2014; Senftleben-König 2014; Auricchio et al. 2020) that disregard the spatial distribution of public employment indicate a crowding out of private jobs, particularly within the manufacturing sector. Second, theoretical models suggest that productivity and amenity spillovers moderate the magnitude of employment effects. However, empirical studies suggest that it is the initial asymmetry in employment outcomes between sending and receiving locations, rather than spillovers, that primarily influences the size of multipliers. The initial unemployment rate in receiving locations, the size of the public employment shock, and the distance between sending and receiving locations correlate positively with private employment multipliers. In contrast, the initial employment-to-population ratio correlates negatively with multipliers.

Moreover, the specific placement of agencies within receiving localities significantly impacts outcomes. New public agencies often create a new city center by displacing existing jobs in the surrounding area. Results also differ based on the type of public jobs that are relocated. Auricchio et al. (2020) demonstrate that artificially increasing local public sectors providing local public goods reduces private employment. In contrast, Faggio (2019) shows that relocating traded public services boosts private employment. Surprisingly, limited evidence exists regarding the adverse effects on sending locations following relocation.

Overall, public employment reallocations produce smaller private-sector job multipliers compared to those resulting from traded-sector firms. For instance, Ehrlich and Overman (2020) suggest that 10 additional tradable jobs create between 5 and 15 extra jobs in the non-tradable sector. Moretti (2010) identifies multipliers as high as 49 additional jobs created for every 10 high-tech jobs relocated. In contrast, this review yields an average multiplier of 0.7 for public employment[4]. This implies that every 10 public jobs relocated

[4]The multiplier is calculated by averaging the total private employment multipliers of studies in Table 3

generate an additional 7 jobs in the private sector.

This chapter is structured as follows: Section 2 explores the history of capital city relocations and purpose-built capitals, examining site selection criteria and differentiating between cases where regional development was the primary or a secondary objective. It then analyzes the impacts of relocation on both sending and receiving regions. Section 3 examines decentralization programs, providing a historical overview of past and present initiatives before synthesizing the theoretical and empirical literature on their economic effects, including employment, population dynamics, and the influence of ex-ante local economic conditions. It also considers impacts on sending regions. Section 4 concludes.

2 Purpose-Built and Relocated Capital Cities

While not immediately obvious, capital relocations, as well as the decentralization efforts discussed in the next chapter, are a form of place-based policy, even if not explicitly labeled as such. Their aim is to promote economic development in specific geographic areas by shifting public sector jobs. This often involves offering relocation incentives to public employees, much like governments offer incentives like tax breaks or hiring subsidies to businesses. While the selection of target regions for public employment reallocation can be discretionary, there's a growing trend toward using quantifiable metrics to identify struggling areas for these interventions.

The following section explores purpose-built capitals and capital relocations by first detailing the key determinants that guide site selection for new capitals. Then, it dives into selected case studies illustrating how regional development serves as both a primary and secondary goal when countries designate a new capital. The section concludes with a summary of the current literature on the impact of capital relocations on both sending and receiving areas, as well as an overview of the costs associated with capital relocation projects.

2.1 Site Selection for New Capital Cities

While capital cities typically emerge through historical processes, economic theory suggests the geographical center of a country as the optimal location for maximizing revenue collection and governance effectiveness (Olsson and Hansson 2011). Another argument speaking for centrality is that isolated capitals are more prone to suffer from corruption and lack of political accountability. Voters who live closer to the capital turn out more in elections, and newspapers write more about politics when their readership lives closer to the capital (Campante and Do 2014). However, the reality often diverges from this theoretical ideal. Many modern capitals are situated away from central locations due to geographical limitations, military strategy, cultural significance of alternative sites, and political pressures. Colonial-era capitals, for instance, were often established on

that show a positive effect on private employment. Summarizing negative multipliers is complex because reversing the positive multipliers from public sector contraction studies (e.g., Auricchio et al. (2020), Senftleben-König (2014)) doesn't necessarily hold. While a contraction may create 0.7 private jobs, an equivalent expansion may not symmetrically destroy 0.7 jobs due to potential non-linearities.

coasts to facilitate resource extraction and trade (Rossman 2016). This coastal bias has contributed to long-term challenges, including uncontrolled urban sprawl and pronounced regional economic disparities between coastal and inland areas.

The post-colonial era has witnessed the emergence of distinct criteria guiding the selection of new capital city sites. These criteria can be categorized into four key determinants: Political Stability, Infrastructure and Connectivity, Regional Development and Economic Factors, and Environmental and Security Concerns. See Table 1 for a non-exhaustive list of purpose-built or relocated capitals since the 18th century sorted by these categories.

Political Stability. When establishing a new capital, countries have to balance the priorities of different interest groups (e.g., different tribes or ethnic groups) and choose a capital site that is accepted as neutral ground. In South Sudan and Nigeria, the respective governments tried to avoid locating the new capital on tribal lands since this could cause power imbalances between tribes. In Kazakhstan, the capital was relocated to the country's north, which had a higher proportion of ethnic Russians, to promote the "Kazakhification" of the region and mitigate separatist tendencies. Botswana's capital was chosen in a location that was acceptable to both European and Batswana interest groups and to weaken support for South African annexation (Rossman 2016).

Infrastructure and Connectivity involve considerations related to critical infrastructure, such as ensuring an adequate water supply that scales with the needs of a capital city. Water scarcity constituted a critical factor when choosing a new capital site or administrative seat in countries with arid regions like Botswana, South Sudan, and China.

Access to national transportation networks proved essential for choosing the new capitals of Botswana (Gaborone Village's connection to the railway network) and South Sudan (Juba's pre-existing airport). Moreover, a new capital site should hold capacity for future growth and avoid existing congestion issues. Critics noted that Juba in South Sudan already faced challenges due to its population of one million inhabitants at the time it was selected as a capital city (Rossman 2016).

The overall cost of congestion varies significantly depending on the location and methodology used for calculation. Congestion in the US costs commuters about 29 billion USD annually (Kim 2019). In Europe, congestion costs are also substantial, with estimates for Rome indicating that the marginal external cost of congestion is about two-thirds of the private time cost of travel (Russo et al. 2021), and in Paris, the economic cost of subway congestion is estimated at 64.6 million euros per year (Haywood et al. 2017). In Dhaka, Bangladesh, the cost is estimated at over 4 USD per day per commuter (Haider and Papri 2021).

Regional Development refers to the potential for stimulating economic growth in underdeveloped areas through strategic capital placement. The establishment of a new capital can act as a driver for regional economic development by attracting additional private investments, creating jobs, and encouraging urbanization outside of congested areas. Countries that put regional development forward as the main reason behind a new capital are discussed in the following subsection.

Environmental & Security Concerns address the need for geographic positioning

that minimizes vulnerability to national security threats or natural disasters. Considerations include selecting locations that do not lie near critical borders or selecting areas that mitigate environmental risks, such as floods or earthquakes. As an example, vulnerability to invasion by sea influenced the capital relocation in Equatorial Guinea. Capital relocations in Indonesia, Kazakhstan, Kenya, and Nepal aimed to minimize risks from seismic activity (Rossman 2016).

2.2 Regional Development as a Primary Goal

The designation of a new national or provincial capital invariably reshapes the development trajectory of both established cities and previously undeveloped regions. With few exceptions, national capitals typically expand to become the most populous cities within their respective countries. Research by Galiani and Kim (2008) quantifies the long-term impacts of attaining national and provincial capital status for cities in the United States and South America. Specifically, in 1990, cities in the United States that attained capital status experienced a population increase of 216%. In contrast, Latin American cities that became capitals observed an average population growth rate of 677%. Thus, capital status contributes much more to population concentration in Latin America than in North America.

A capital city that is both the most populous urban center and exerts substantial influence across political, economic, and cultural domains exemplifies the phenomenon of capital primacy (Galiani and Kim 2008). Capital primacy arises from several factors. A capital's dual role as a political and administrative center facilitates the concentration of employment opportunities in both the public and private sectors (Dascher 2000). Additionally, centralized political systems, such as those in former Spanish colonies like Mexico and Argentina, tend to prioritize capital cities, resulting in a disproportionate allocation of population and resources. The higher degree of centralization in Latin America results in a considerably larger effect of subnational capital status on population than in the US: population grows by 353% in subnational capitals in Latin America and only 38% in state capitals in the US. (Galiani and Kim 2008).

Due to these advantages, relocating capital cities has become a strategic tool for regional development over the past century. These "mission capitals" or "forward-thrust capitals" aim to stimulate economic growth and reduce regional disparities. Examples include Brazil, Tanzania, Malawi, South Korea, and China (where a non-capital city shall fulfill a considerable portion of administrative functions in the future).

Brazil 1960: The discussion concerning the relocation of Brazil's capital emerged in the late 18th century after the War of Independence. However, a formal decision was not reached until 1956, during the presidency of Juscelino Kubitschek[5]. The primary

[5]The historical relocation of Brazil's capital from Rio de Janeiro to Brasília represents the country's second capital relocation. The first occurrence happened in 1763 when the capital was shifted from Salvador, located further north along the coast, to Rio de Janeiro. This strategic relocation was primarily influenced by Rio de Janeiro's geographical proximity to Minas Gerais, a state abundant in primary resources. During that period, significant gold discoveries in Minas Gerais positioned the region as Brazil's new economic center.

objectives underpinning this decision were aimed at redistributing economic activity away from the coast. Brazil suffered from extreme disparities in economic development due to its distinctive geography. The enclave-like set-up of Brazil's coast hindered the formation of smaller cities along transport corridors, thereby weakening intra-national political and economic linkages. Consequently, inland regions, particularly those situated in the northern part of the country, remained substantially underdeveloped. Kubitschek's policy initiative "Fifty Years of Progress in Five" sought to achieve comprehensive economic, political, and social national integration. Brasília was constructed on land ceded from Goiás and formally inaugurated on April 21, 1960, (Rossman 2016). The development of Brasília went along with considerable investment in highway systems linking the new capital with other principal urban areas, the establishment of administrative offices, residential zones, and support facilities (Morten and Oliveira 2024).

Tanzania: Tanzania's ongoing relocation of its capital from Dar es Salaam to Dodoma, which began in 1973, is similarly motivated by the goal of decentralizing development. The official start of the relocation project was in 1973, with the aim of helping underdeveloped regions, detaching from colonialism and the symbolism associated with a capital established from a colonial perspective, relieving congestion in the old capital, and improving public goods provision, particularly housing. Before the relocation, Canadian consultants attempted to create a master plan to ease congestion in Dar es Salaam, but their suggestions, based on Western town planning principles, did not align with Tanzanian socialism ideas at the time. The future capital region, Dodoma, was lagging behind due to overgrazing, neglected agricultural development, and deforestation in the colonial era when the German colonial administration built the Central Railway Line from Dar es Salaam to Lake Victoria. The selection of Dodoma as the new capital was also based on its equidistant position from major tribal regions (Siebolds and Steinberg 1980; Rossman 2016).

Malawi: In 1975, the administrative capital of Malawi was relocated from Zomba, situated in the southern region, to Lilongwe. This strategic move was primarily motivated by the objective of establishing an autonomous center for Malawi, a nascent African state strategically positioned in the core geographical area of the nation. The relocation aimed to stimulate economic development activities within the northern and central regions of Malawi, thereby counterbalancing the existing business hub located in Blantyre. However, this decision faced significant criticism due to its perceived ineffectiveness in transforming Lilongwe into a growth pole. Additionally, there were concerns regarding the personal motivations of Hastings Banda, who served as president from 1963 to 1994, in making this decision. He was accused of favoring his Chewa ethnic group over the welfare of the country. (Rossman 2016).

South Korea: South Korea moved its seat of government from Seoul to Sejong in 2012. Prior to the relocation, Seoul was home to 56% of all manufacturing companies, 95% of Korean corporations, and 65% of the country's top universities. Although security concerns related to the proximity to North Korea played a role in the decision, the primary motivation for the relocation was to achieve a more balanced pattern of national development. The government selected Sejong as the new capital, naming it after Sejong the Great, the 15th-century king who is credited with creating Korea's native phonetic

alphabet. The location of Sejong, 75 miles south of Seoul, was chosen due to its position at the intersection of major transportation networks (Rossman 2016).

China: China has been considering relocating its capital since the 1980s, with the idea gaining traction in the 2000s. In 2006, nearly 500 representatives in the National People's Congress moved a joint motion requesting the relocation of the Chinese capital city. The reasons behind the proposal are imbalances in the country's economic development and Beijing's infrastructure issues, congestion, and expensive water supply, as well as environmental concerns such as smog and sand storms. Several candidates have been suggested for the new capital, with the aim of shifting China's economic core from the East to the Midwest. These include Xinyang in Henan, Yueyang in Hunan, and a proposed "One Country - Three Capitals' plan", which suggests Shanghai as the economic capital, Beijing as the cultural capital, and a newly planned city named Thongjing as the political capital. So far, instead of opting for a full relocation, China has decided to develop satellite regions to relieve pressure on Beijing in terms of population density, traffic congestion, and pollution. Launched in 2017 and set to be completed in 2035, the most prominent one is Xiong'an, located about 100 kilometers southwest of Beijing. With the promise of creating a "First-class international city" covering 2,000 square kilometers, construction costs have already exceeded 540 billion yuan (78 billion USD). Some government agencies, state-owned enterprises (SOEs), and research institutions have been relocated to Xiong'an to promote coordinated development of the Beijing-Tianjin-Hebei region. Still, other entities have resisted moving to Xiong'an despite incentives in place, slowing the relocation process (Rossman 2016; National Development and Reform Commission 2021; The Economist 2023).

Ongoing Discussions: Several nations are currently engaged in discussions regarding the relocation of their capital cities, with a primary focus on fostering economic development in regions that are experiencing slower growth. These discussions vary significantly in terms of the level of maturity and commitment demonstrated by each country. Among these nations, Mongolia stands out as a country that has undertaken substantial measures towards actual implementation. Mongolia's initiative to move its capital away from Ulaanbaatar is a response to the concentration of over 40% of its population in the current capital. The government has designated roughly 189,000 hectares in the Orkhon Valley for the "New Kharkhorum City" project and launched an international design competition in March 2024. The relocation is supposed to address water scarcity, air pollution, and housing shortages (Urban Planning Administration of the New Kharkhorum City 2024).

More preliminary discussions have emerged in the UK, Kenya, and Taiwan. In the UK, discussions about relocating the capital from London began in the early 2000s, driven by factors such as congestion, high prices, increasing population, and long commute times. Other reasons include London's political power over the rest of the country and the perceived estrangement of London from the rest of the UK, the deepening economic gap between the north and the south, and the need to develop decaying former industrial areas. Proponents argue that the move could help counter secessionist trends in Scotland and strengthen English identity. The recent need to renovate the Palace of Westminster has also served as a justification to discuss a permanent relocation of the seat of government.

Candidates for the new capital include Liverpool, Birmingham, Middleborough, Litchfield, Newcastle, and Nottingham.

Kenya has been debating moving the capital from Nairobi to promote development in the country's north, with Konza Techno City, known as "Silicon Savannah", emerging as a potential candidate. Since 2006, there have been discussions in Taiwan about relocating the capital from Taipei, located in the wealthy and developed north, to the poor and underdeveloped south of the country. In 2012, the government formed a special working panel consisting of cabinet members to discuss the issue seriously. However, the idea has lost momentum since the Kuomintang party, whose support base is in Taipei and the north, denied the proposal (Rossman 2016).

2.3 Capital Relocations with Regional Development as a Secondary Goal

In contrast to the preceding cases where regional development was the primary goal, capital relocations in Pakistan, Côte d'Ivoire, Nigeria, and Kazakhstan have been driven primarily by ethnic tensions. Nevertheless, regional development also played a remarkable role as a secondary goal. Pakistan's relocation to Islamabad in 1959 was primarily motivated by security concerns, but the development of the northern regions to balance the historical dominance of the coastal south was also a significant consideration. In 1983, the capital city of Côte d'Ivoire was relocated from the coastal city of Abidjan to Yamoussoukro. Prior to this relocation, Yamoussoukro was a small village situated in the tropical swamps at the geographical center of the country and, notably, the birthplace of then-President Félix Houphouët-Boigny. The primary motivation for the move was reinforcing Christian identity in the predominantly Muslim and agrarian north of the country, but the goal was also to promote regional development in that area.

Nigeria's relocation from Lagos to Abuja in 1991 was mainly aimed at addressing ethnic tensions, but reducing regional disparities was also a factor. In 1997, Kazakhstan decided to relocate its capital from Almaty to Astana (now known as Nur-Sultan). A combination of factors, including Almaty's proximity to the Chinese border, vulnerability to earthquakes, lack of space for expansion, an unfavorably cold climate, pollution, and regional development, led to the move. However, the primary reason was to weaken separatists and promote the "Kazakhification" of the north, as Kazakhs were not the majority in their own country at the time of the Soviet Union's collapse. President Nursultan Nazarbayev aimed to solidify the presence of ethnic Kazakhs in the north, balancing the Russian majority and rectifying historical injustices caused by a famine in 1932-1933. Despite criticism regarding the project's cost and the new capital's extremely cold temperatures, the move resulted in a significant demographic shift, with the Kazakh population in Astana increasing from 18% in 1989 to 65% by 2010 (Rossman 2016).

In the more recent capital relocation cases of Myanmar and Indonesia, security concerns and fear of natural disasters alongside regional development concerns were the major drivers. The relocation of the capital city of Myanmar was officially implemented on 27 March 2006 at precisely 06:37:00 am, a time selected due to alleged astrological advantages. Official stances stated that the decision was also influenced by a perceived threat of an invasion by the United States and NATO forces. In reality, scholars assume that the

high population density in the Irrawaddy Valley necessitated a strategic redistribution of inhabitants toward less populated areas such as the Sittaung River region. The relocation also served as an economic stimulus aimed at fostering development in the eastern Salween regions, which had previously lagged behind economically. It also allowed for enhanced governmental oversight and control over regions known for instability and turbulence and facilitated more direct management and administration from a central point within Myanmar's territory (Rossman 2016). In 2010, the Indonesian government started the discussion to relocate the country's capital from Jakarta to a new location over 1200 km away in East Kalimantan on the island of Borneo. The decision to move the capital is driven by a combination of factors, including Jakarta's high population density, severe congestion, and vulnerability to natural disasters such as earthquakes and flooding due to its location in one of the most seismically active areas on Earth. The relocation also aims to promote regional development in Kalimantan, balance the ethnic dominance of the Javanese, and enhance Indonesia's international standing. The new capital, which is expected to draw around 75,000 officials and 125,000 of their family members, was due for completion by 2024 (Rossman 2016). However, although the inauguration took place, funding issues kept causing construction delays. Experts assume it will not be operational until the 2040s (Sullivan 2024).

Other nations have considered relocating their capitals for various reasons. Congestion motivates such discussions in Senegal, Somalia, and the Philippines, while security concerns, including geopolitical issues and secessionist movements, drive similar considerations in Argentina, Equatorial Guinea, and Russia (Rossman 2016).

2.4 The Impact of Capital Relocation

The economic, demographic, and political ramifications of establishing new or relocating existing capital cities remain an insufficiently explored topic within economics. With few exceptions, existing research is often descriptive, lacking rigorous quantitative analysis of the long-term impacts on both sending and receiving regions. Notwithstanding these limitations, a summary of the current body of research provides the following key insights.

2.4.1 Costs of Relocation

Accurately assessing the financial costs of capital relocation is challenging due to data limitations and variations in funding sources. Official figures are often incomplete, as seen in Tanzania, where airport and infrastructure costs were omitted from total cost calculations. In Tanzania, shifting government support and reliance on foreign loans (similar to Malawi and Sudan) hampered funding, resulting in the project receiving only 39% of its budget between 1973-1986 and under US$3 million between 1987-2002 (Kironde 1993; Rossman 2016). Brasília's construction, consuming 2% of Brazil's 1960s GNP, fueled inflationary pressures (Hay 1979).

Reported expenditures for capital relocations range from US$0.12 billion (Malawi) to US$19.5 billion (Brazil), and 0.8% (Germany) to 500% (South Sudan) of GDP. Recent projects like South Korea (3.9%) and Indonesia (2.4%) tend toward the lower end

(Rossman 2016; Van de Vuurst and Escobar 2020). Comparing these costs to other economic development measures is difficult. For example, South Korea's relocation costs roughly equate to two and a half years of US economic development spending in 2004 (US$180 billion annually, 1.5% of GDP) or 14 years of US place-based policy spending in 2020 (US$60 billion annually 0.3% of GDP)[6] (Drabenstott 2006; Bartik 2020a). At the same time, a new capital represents a long-term, generational investment, unlike the often less predictable effects of different policies.

2.4.2 Environmental Impacts

While green capitals offer the potential for more sustainable urban living, their construction and operation present ecological trade-offs, such as habitat loss and increased resource demands, making the overall environmental impact uncertain. New capital cities offer opportunities for innovative, sustainable urban design. Purpose-built green infrastructure, from renewable energy integration and mandatory green building codes to advanced waste management and robust public transit, can minimize environmental impact and foster sustainable living for a larger share of the national population. Green spaces, including parks and urban forests, further enhance air quality and mitigate urban heat. China's shift to quality-driven urbanization has yielded ecological benefits. Smart city initiatives, while smaller in scale than new capitals, reduced industrial exhaust gas by 20.7% and wastewater by 12.2% between 2005 and 2017 through technological advancements (Chu et al. 2021; Yu 2021).

Conversely, constructing a new capital inevitably entails environmental costs. Land conversion and habitat destruction are unavoidable. The substantial resource demands of such large-scale projects can exacerbate deforestation, mining impacts, and other resource extraction pressures. Furthermore, even a sustainably designed capital can strain surrounding areas through increased traffic, pollution, and resource consumption. Indonesia's new capital, Nusantara, threatens one of the world's most vital biodiversity hotspots and carbon sinks in Borneo's forests and mangroves. Deforestation from the new capital's footprint alone could generate emissions exceeding Indonesia's total 2014 greenhouse gas output by 26% (Teo et al. 2020).

2.4.3 Population Dynamics

Planned capitals successfully attract significant population growth, as demonstrated by Brasília (Quistorff 2015) and Abuja's rapid expansion (Rossman 2016; Teo et al. 2020). In 2019, planned capitals housed between 0.5% (Islamabad) and 6.1% (Nur-Sultan) of their respective national populations, or 2.3% across twelve planned capital cities (Teo et al. 2020). This growth can shift ethnic composition, as seen in Nur-Sultan (Rossman 2016). However, the overall impact on national population distribution is often limited,

[6] Note that these calculations do not include considerable new investments such as the American Rescue Plan Act (2021) (ARPA), the Infrastructure Investment and Jobs Act (2021) (IIJA), the Inflation Reduction Act (2022) (IRA), and the Chips and Science Act (2022). For an overview, see Gansauer (2024).

as illustrated by persistent overcrowding in Rio de Janeiro and São Paulo (Grimes et al. 2017).

2.4.4 Economic Effects

Relocating a capital city stimulates local economies and local labor markets, primarily through private sector growth in services, but this growth can be accompanied by stagnation or decline in manufacturing, leading to a sectoral shift in the local economy. Studies measure the effect of public employment reallocation by its multiplier effects. The jobs multiplier quantifies the number of additional jobs generated in the private sector per one additional public job[7]. A fiscal multiplier is a measure of the change in economic output resulting from a change in government spending or taxation. Studying Brasília's relocation Quistorff (2015) finds a public-to-private jobs multiplier of 1.7 and a fiscal multiplier of 2.93. These findings suggest that for every 10 new government jobs, 17 private sector jobs were created, and for each 10 units of government spending, 29.3 units of total economic output were generated. The improved transport network that connected Brasília with other state capitals increased welfare by 2.8% due to reduced trade and migration costs (Morten and Oliveira 2024). Leveraging historical night-time light data as a proxy for economic activity, Teo et al. (2020) analyzed 12 planned capitals between 1992 and 2018. Their findings reveal an average annual nightlight growth of 5.7% within a 10-kilometer radius of these cities. While the German capital move from Berlin to Bonn[8] yielded a smaller overall multiplier of 9 private jobs per 10 public jobs created (Becker et al. 2021), the relocation also prompted a sectoral shift in Bonn, with the creation of 10.5 jobs in the services sector, alongside a small reduction of 1.9 jobs in the manufacturing sector. The return of the capital to Berlin showed a smaller multiplier of 3.3 jobs for each 10 public jobs relocated (Faggio, Schluter, et al. 2022), primarily driven by service sector growth without any manufacturing losses.

2.4.5 Impact on Sending Locations

Research on the impact of new capitals on their predecessors is limited. Rio de Janeiro's experience suggests that while relative economic standing may decline, absolute negative effects may be minimal. Despite losing its status as Brazil's financial center and experiencing a decline in its share of national GDP following Brasília's establishment (Osorio and Versiani 2014; Contel and Wójcik 2019), Rio de Janeiro maintained its population and employment levels (Quistorff 2015).

[7] Research also differentiates between job multipliers in traded and non-traded industries, consistent with spatial general equilibrium models. The traded industry is proxied by the manufacturing sector, while the non-traded industry is predominantly proxied by the services sector.

[8] Following World War II and the division of Germany, Bonn served as the capital of West Germany. The reunification of Germany in 1990 led to the eventual return of the capital to Berlin.

Table 1. Non-exhaustive list of capital relocations (or partial relocations) since the 18th century. Purpose-built capitals appear in bold. The table was adapted from Rossman (2016) and expanded by the author. Where multiple dates exist—for instance, the date of legal designation, the start of government operations, or first legislative session—only one date is shown here. Some relocations occurred gradually or remain ongoing. In the case of China's Xiong'an, the new site is a secondary administrative hub rather than a complete replacement for the existing capital.

Country	Sending	Receiving	Objective(s)	Year
Regional Development (Primary)				
Brazil	Rio de Janeiro	**Brasília**	Develop interior	1960
Tanzania	Dar es Salaam	**Dodoma**	Centrality, development	1970s (ongoing)
Malawi	Zomba	Lilongwe	Centrality, development	1974
South Korea	Seoul	Sejong	Reduce Seoul dominance	2012
China	Beijing	Xiong'an (secondary administrative hub!)	Relieve pressure on Beijing	2017
Regional Development (Secondary)				
Pakistan	Karachi	**Islamabad**	Security, planned city	1967
Kazakhstan	Almaty	**Astana** (now Nur-Sultan)	Weaken separatists, development	1997
Côte d'Ivoire	Abidjan	**Yamoussoukro**	President's hometown	1983
Myanmar	Yangon	**Naypyidaw**	Strategic location, isolation of military regime	2005
Political Stability				
USA	Philadelphia[9]	Washington, D.C.	Neutral site	1800
Canada	Montreal	Ottawa	Reduce ethnic tensions, defensibility	1857
South Africa	Potchefstroom	Pretoria	Strategic location	1860
New Zealand	Auckland	Wellington	Compromise and central location	1865
Russia	Saint Petersburg	Moscow	Return to historical capital	1918

Continued on next page

[9] After the Constitution took effect in 1789, Congress briefly convened in New York before moving to Philadelphia in 1790, prior to the establishment of Washington, D.C. (National Constitution Center 2021)

Table 1 continued

Country	Sending	Receiving	Objective(s)	Year
Albania	Durrës	Tirana	Strategic location	1920
Bahrain	Muharraq	Manama	Reflect national identity	1923
Turkey	Constantinople (Istanbul)	**Ankara**	Break with Ottoman past	1923
Guinea-Bissau	Bolama	Bissau	Colonial administration	1941
China	Nanjing	Beijing	Communist regime's choice	1949
Germany	Berlin	Bonn	Post-war division	1949
Senegal	Saint-Louis	Dakar	Post-independence nation-building	1958
Botswana	Mahikeng	**Gaborone**	Post-independence capital	1965
Rwanda	Butare	Kigali	Post-independence capital	1962
Uganda	Entebbe	Kampala	Post-independence capital	1962
North Yemen	Ta'izz	Sana'a	Unification and stability	1962
Libya	Bayda / Benghazi	Tripoli	Centralized control	1969
Germany	Bonn	Berlin	Reunification	1999
Palau	Koror City	**Ngelrulmud**	Constitutional mandate	2006
Federated States of Micronesia	Kolonia	**Palikir**	Decentralization	1989
Infrastructure and Connectivity				
Mozambique	Ilha de Moçambique	Lourenço Marques (Maputo)	Colonial access, port city	1907
Zambia	Livingstone	Lusaka	Railway hub	1931
India	Calcutta, Kolkata	**New Delhi**	Reduce congestion, and protests, symbolism	1911
Jordan	Salt	Amman	Railway access	1921
Australia	Melbourne, Sydney	Canberra	Planned capital, compromise	1927
Mauritania	Saint-Louis	**Nouakchott**	Coastal access	1957
Malaysia	Kuala Lumpur	**Putrajaya**	Relieve congestion	1999
Nigeria	Lagos	**Abuja**	Central location, reduce congestion	1991
Environmental and Security Concerns				
Belize	Belize City	**Belmopan**	Hurricane Hattie aftermath	1970

Continued on next page

Table 1 continued

Country	Sending	Receiving	Objective(s)	Year
Indonesia	Jakarta	Nusantara	Relieve congestion, mitigate climate risks	2024 (ongoing)

3 Decentralization Efforts

While the countries discussed in the last chapter opted for capital relocations, other governments view the concentration of population, wealth, and influence in the capital as an issue. Over time, capital cities have exhibited substantial growth, while other regions have not experienced commensurate prosperity (Carroll and Meyer 1982; Heider et al. 2018). In an effort to redistribute wealth away from the capital, policymakers have started to advocate for decentralization strategies aimed at reallocating public agency's headquarters from capital cities to interior areas. Since the main objective behind these relocations is to promote more equitable economic development trajectories in certain lagging-behind regions within a country, they can be considered de facto place-based policies. Prominent examples of relocation programs that were implemented as a place-based policy are the ones in South Korea from 2011 to 2018 (Lee et al. 2024), Sweden from 2004 to 2019 (Landen 2012), Germany since 2015 (Bavarian Ministry of Finance 2024), Denmark from 2015 to 2018 (Jyllands-Posten 2015), the United Kingdom from 2004 to 2010 (Home Office 2009), and France since 2019 (Interministerial Directorate for Public Transformation 2022). However, equity in economic opportunity is not the sole motivation behind reallocation programs. Other motivations for decentralization include cost-saving measures and the alleviation of congestion in capital cities, as evidenced in earlier programs in the United Kingdom between 1963 and 1993 (Jefferson and Trainor 1996). Political considerations also influence these policies. For example, post-reunification Germany sought to balance the distribution of public sector employment between the former East and West regions from 1992 onward (German Bundestag 1992). The following subsections lay out specific examples of public agency relocation programs. First, completed programs are examined, starting with the largest initiatives and continuing in descending order based on the number of jobs relocated. Subsequently, ongoing and proposed relocation efforts and their motives are discussed.

3.1 Completed Programs

The United Kingdom has spearheaded public employment reallocation efforts with the largest number of jobs relocated. Since 1963, approximately 95,000 positions have been transferred from London and the South East to other regions across all programs implemented (Jefferson and Trainor 1996).

Following closely is South Korea's initiative launched in 2003 to foster equitable growth across regions. As of the end of 2018, South Korea successfully relocated over 52,808 employees from 128 entities at a cost of approximately USD 10 billion (Lee et al. 2024).

In continental Europe, France and Germany have been notable examples. Between 1960-1991, approximately 25,350 jobs were relocated from Paris, followed by an accelerated phase of 17,260 relocations during 1992-1999. While initially focused on decentralizing from Paris to address regional inequalities, the policy evolved after 1991 to emphasize developing competitive regional metropolitan hubs capable of rivaling European economic centers like Milan in Italy and Frankfurt in Germany. The Comité pour l'Implantation territoriale des Emplois Publics (CITEP) managed these relocations, with implementation costs estimated at 81,000-110,000 Euros per transferred position. Data from 2001 reveals that paradoxically, the Île-de-France region remained the largest beneficiary with 5,503 relocated positions, followed by Rhône-Alpes and Aquitaine (François-Poncet 2003).

In Germany, the first effort was prompted by the Independent Federalism Commission, which was formed after reunification to achieve an equitable distribution of federal agencies across East and West Germany. The commission proposed relocating 16 federal agencies, including the Federal Court for Labor Law, the Federal Environment Agency, and the former Federal Social Insurance Institution (German Bundesrat 1992). Ultimately, most recommendations were enacted through various legislative measures despite difficulties. However, the commission was dissolved in 1994, and there is no record of how many jobs exactly were reallocated.

Following Germany, Denmark has undertaken substantial efforts to reallocate government jobs, with approximately 8,000 positions moved out of Copenhagen under the "Better Balance" policy. Initiated in 2015 by Prime Minister Lars Løkke Rasmussen, this policy was executed in two phases: "Better Balance I" in 2015 and "Better Balance II" in 2018. The objective was to decentralize roughly 10% of all state-sector positions, involving 89 institutions across 49 cities, estimating expenses at approximately 222 million USD as of 2022 (Jyllands-Posten 2015). Between 2004 and 2019, the Swedish government executed a program aimed at relocating approximately 4,000 jobs from Stockholm to Northern inland regions. This program entailed moving personnel from around 62 government agencies (Landen 2012).

3.2 Ongoing and Proposed Programs

Overall, there are ongoing reallocation programs in Canada, France, Germany, Mexico, Norway, the UK, and Zimbabwe. The high-income countries Austria, Canada, France, Germany, Norway, and the UK are prioritizing regional development as the primary driver for their reallocation efforts, making these programs de facto place-based policies.

The "Homeland. Country(side). Livability" initiative in Austria, inaugurated in 2017, aims to decentralize federal administrative functions by relocating approximately 3,500 jobs, constituting 10% of the total federal administrative positions, from Vienna to rural areas over a ten-year period. This initiative takes its cue from the Bavarian Homeland Strategy in Germany mentioned above (Bavarian State Government 2017). However, there is little information on the progress of the implementation of the program.

In Canada, Quebec has a major coordinated program, the "Plan gouvernemental de régionalisation de 5,000 emplois de l'administration publique," aiming to relocate 5,000 public administration jobs from urban areas to regions by 2028, involving 55 public

administration organizations (Prime Minister 2022).

Similarly, France has initiated a substantial job relocation program targeting the redistribution of 6,000 civil service positions from Paris to medium-sized cities by the year 2027. This initiative, which commenced in 2019, forms part of a comprehensive strategy to decentralize governmental functions and diminish the concentration of public sector employment within Paris. This plan is consistent with President Macron's broader public service reform objectives, which prioritize bringing government services nearer to French citizens, but foremost promoting regional development (Interministerial Directorate for Public Transformation 2022).

Recent German initiatives such as Bavaria's Homeland Strategy have been also focusing on convergence between urban centers and rural areas. Launched by the Bavarian state government in 2014 with an initial timeline from 2015 to 2025 and extended by a second phase in 2018 to run until 2030, this program aims to redistribute approximately 5,950 jobs from Munich to other inland regions within Bavaria across both phases (Bavarian Ministry of Finance 2024). Furthermore, the German Federal Government has announced plans to reallocate an additional 5,000 federal public sector jobs by 2028 as part of a strategy to mitigate the socioeconomic impacts of the energy transition on coal mining regions (German Bundestag 2024).

Since 2023, Norway is implementing a significant program to shift public sector jobs away from Oslo to less central regions, particulary to the Northern Norway and Finnmark regions. The regional policy goal is to locate agencies in specific regional centers where they have the greatest potential to contribute to job growth (Regjeringen 2023).

The UK government is planning an reallocation effort of 22,000 jobs out of London by 2027. The Places for Growth (PfG) programme is a UK government initiative launched in 2019 to decentralize civil service roles from London across the United Kingdom. Originally targeting 22,000 role relocations by 2030, the program exceeded its interim goal of 15,000 relocations by 2025, achieving 16,061 relocations by Q3 2023. As a result, the government revised its target to complete the 22,000 relocations by 2027. The program aims to create a more geographically diverse civil service, with key objectives including ensuring 50% of UK-based Senior Civil Servants are located outside London by 2030 and increasing government presence across Scotland, Wales, and Northern Ireland. The majority of relocations have been to the North West of England (21%) and Yorkshire and the Humber (19%), with significant clusters in cities like Leeds, Manchester, and Glasgow (Government of the United Kingdom 2024).

In Mexico and Zimbabwe, the focus is not on regional development but primarily on decentralizing services to improve local public goods provision to citizens. In Zimbabwe, civil servants from the Matabeleland North province are relocating to Lupane to bring services closer to the people as part of the country's Vision 2030 (The Chronicle 2024). Mexico's previous president, Andrés Manuel López Obrador, initiated a relocation project that was delayed, allegedly due to the COVID-19 pandemic. The new president, Claudia Sheinbaum, is reassessing whether the program will continue. To date, only 7 of the 16 ministries selected for the program have been relocated (CE Noticias Financieras 2024).

Decentralization or relocation proposals are being discussed but not yet implemented in Liberia, Sierra Leone, and Canada, and in the United States at the federal level,

Liberia's case involves decentralizing the Ministry of Transport to enhance accessibility and service delivery but does not mention distinct agency relocations. Sierra Leone aims to decentralize service delivery by empowering local governments to bring essential services closer to the people as part of a new policy to overhaul the public sector (Front Page Africa 2024).

In Canada, public support is growing for decentralizing federal jobs, especially in Alberta and Saskatchewan. Historically, the federal government has relocated some departments outside the National Capital Region on an ad hoc basis, but not as part of a comprehensive national strategy, such as locating Canada's Water Agency headquarters in Winnipeg (The Conversation 2021).

In the United States, unions are concerned about President Trump's agenda announcement to relocate over 100,000 public servants away from Washington, D.C. (Targeted News Service 2024). The U.S. proposal appears to be politically motivated and based on distrust of public sector employees in Washington rather than focused on regional development or place-based policies.

Table 2. Non-exhaustive list of decentralization programs since the 1960s

Country	Sending	Receiving	Objective	Period	N. of Jobs Relocated
Completed Relocations					
France	Paris	Various regions, mainly West and Southwest	Combat "Paris and the desert français"	1960-1991	25,350
UK	London	Rest of UK	Cost savings	1963-1972	22,525
UK	London	Rest of UK	Hardman recommendations	1973-1988	11,636
UK	London	Rest of UK		1989-1993	13,979 4,963 (new)
France	Paris	Various regions (focus on major metros like Lyon, Lille)	Regional competitiveness, state modernization	1992-1999	17,260
Germany	Bonn	Eastern Germany	Reunification and Distributing public agencies between West and East	1992	Unknown
Norway	Oslo	Various regions including Bergen, Tromsø, Tjeldsund	Regional development, spread competence nationwide	2003-2006	1,600
UK	London	Rest of UK	Lyon's Review	2004-2010	25,420
Sweden	Stockholm	Northern inland	Regional development	2004-2019	4,000
South Korea	Seoul metropolitan area	Various regions	Regional development	2011-2018	52,808
Denmark	Copenhagen	Various parts of Denmark	Decentralization	2015-2018	8,000

Country	Sending	Receiving	Objective	Period	N. of Jobs Relocated
Ongoing Relocations					
Germany	Mainly Munich	Inland areas in Bavaria	Regional development	2015-2025	3,000
Austria	Vienna	Rural areas	Regional development	2017-2027	3,500
France	Paris	Medium-sized and rural areas	Decentralization, regional development	2019-2026	6,000
UK	London	Rest of UK	Places for Growth Programme	2019-2030	22,000
Germany	Federal public jobs	Coal mining regions	Support energy transition	2021-2028	5,000
Mexico	Mexico City	Various regions	Regional development	2023-	Unknown
Zimbabwe	Matabeleland North	Lupane	Service provision	2024-	Unknown
Canada	Quebec's urban areas	Regions	Regional development	2021-2028	5,000
Norway	Oslo	Less central regions (Northern Norway, Finnmark)	Regional development	2023-	635-1,800
Proposed Relocations					
US	Washington DC	Various regions	Political redistribution	2025-	100,000
Liberia	Central Government	Various regions	Service provision	TBD	Unknown
Sierra Leone	Central Government	Local governments	Service provision	TBD	Unknown
Canada	Ottawa	Various regions	Regional development	TBD	Unknown

3.3 The Impact of Decentralization Programs

The literature on public employment reallocation remains small compared to more mature literature strands in the place-based policy field. Nevertheless, to summarize its findings, this analysis proceeds by first addressing operational issues with the definitions of the public sector, traded and non-traded sectors, and local labor markets. Subsequently, employment effects are examined, differentiating outcomes by geographical level and time horizon (short-run versus long-run). The analysis then details the impacts on population and unemployment, the effects on sending locations, and points to open questions about the relationship between public and private employment.

3.3.1 Theoretical Framework

The theoretical framework below guides the subsequent empirical discussion. Specifically, the evaluation of empirical studies will be informed by theoretical results regarding the trade-off between the short-term multiplier effect and long-term general equilibrium effect, as well as the role of productivity and amenity spillovers as determinants of employment multiplier magnitude.

The literature on public employment reallocation employs two-sector spatial general equilibrium models characterized by a large number of cities and monopolistic competition of firms in the private sector based on Helpman (1998). Land is variably modeled either as a housing market contingent on labor, with its revenue subject to lump sum redistribution (Becker et al. 2021), or as a fixed quantity of land, as assumed in Moretti (2010) and adapted by Faggio (2019). Trade costs between cities are incorporated through iceberg transport costs. The models adopt homogenous workers who supply exactly one unit of labor irrespective of wage levels with no disutility from labor supply and can move across sectors within and across cities.

The private sector is divided into a traded sector, where goods prices are determined at the national level, and a non-traded sector, where goods prices are determined locally. The public sector produces non-traded public goods consumed locally. The relocation is incorporated as an exogenous influx of public sector workers to the receiving location.

This influx leads to a higher local demand for non-traded goods like local services (hairdressers, bakeries, etc.) and a higher local demand for traded goods like manufactured goods that are also sold outside the receiving region (e.g., cars). The additional local demand for non-traded goods increases local goods prices and, consequently, local employment in that sector. The additional local demand for traded goods might increase wages but is not strong enough to affect prices for traded goods determined nationally. New residents drive up local housing prices and rents, leading to higher costs for local businesses in the traded sector. Facing higher local costs, firms can't compete at national prices and exit the local traded market, decreasing local traded employment. Overall, the core model results in a pitch between a short-term positive shock to non-traded jobs leading to an increase in private employment and a long-term general equilibrium effect on traded jobs through higher costs leading to a decrease in private employment.

Various extensions refine this canonical model within the literature. Faggio (2019)

posits an extended framework incorporating intra-city areas to align with her empirical data's granularity at census output areas. Furthermore, she advocates modeling public sector-produced goods as traded services rather than local public goods. This approach appears suitable for examining targeted relocation programs such as the Lyons Review in the UK (Faggio 2019), and South Korea's relocation initiative (Lee et al. 2024). However, it proves inadequate for analyzing general public sector expansions or contractions between censuses studied by Faggio and Overman (2014), Senftleben-König (2014), and Auricchio et al. (2020). Jofre-Monseny et al. (2020) introduce an elaborate labor market model encompassing unemployment through search-and-matching mechanisms.

Both Auricchio et al. (2020) and Becker et al. (2021) model amenity and productivity spillovers between the public and private sectors. Auricchio et al. (2020) also incorporates mobility costs. These additions conclude that amenity and productivity spillovers between the public and private sectors may alleviate adverse general equilibrium effects on the traded sector. Specifically, if the public sector improves amenities or local productivity—potentially through knowledge spillovers between the two areas of the economy—employment in the private traded sector might also rise through relocations. Faggio (2019) suggests that publicly provided traded services could positively impact the private traded sector through agglomeration effects.

3.3.2 Definition and Measurement of Key Concepts

This section starts the empirical discussion by addressing inconsistencies in how empirical studies define key concepts such as traded and non-traded sectors, public sector industries, and local labor markets.

Traded and Non-Traded Sectors. In most of the literature, discretionary decisions are made when defining traded and non-traded sectors. Typically, manufacturing is classified as a traded sector, whereas services are classified as a non-traded sector; however, business services are often exported. Faggio and Overman (2014) and Senftleben-König (2014) are noteworthy exceptions that address this classification issue. Faggio and Overman (2014) leverage insights from Jensen et al. (2009) from the offshoring literature to identify service activities potentially exposed to international trade. Senftleben-König (2014), on the other hand, follows Dustmann et al. (2014) by classifying sectors based on their market's geographical range: industries with export volumes below the 25t percentile of 1995's export volume distribution are designated as non-tradables, whereas those above this threshold are classified as tradable.

Public Sector Industries. Each study also defines the public sector differently. Faggio and Overman (2014) examine the expansion of the UK public sector, particularly in health and education, while Senftleben-König (2014) and Auricchio et al. (2020) investigate contractions in Germany and Italy respectively due to austerity measures. Senftleben-König (2014) includes public administration, defense, education, health, and social work. Faggio and Overman (2014) augment this definition by incorporating public corporations and local authorities. Conversely, Auricchio et al. (2020) exclude state-owned enterprises from their analysis. For a detailed exposition of the definitions of the public sector used in each study, see Table 3.

Local Labour Markets. Most research does not engage in the analysis of local labor markets or incorporate commuting flows, primarily due to the lack of data regarding the latter. This is important because of two reasons. First, measuring employment effects at a very disaggregated level doesn't say much about structural changes in employment opportunities in an area. Second, studies at a more aggregated level enable researchers to capture general equilibrium effects, which typically manifest at a broader geographic scale. Auricchio et al. (2020) conduct a very granular analysis at the municipal level, while Faggio (2019) examines data at the level of census output areas. Faggio, Schluter, et al. (2022) extend this research to the plant level, and Lee et al. (2024) focus on neighborhood-level data. These disaggregated studies have the advantage of capturing more localized effects that dissipate rapidly over distance. Nonetheless, the implications for the local labor market remain unclear. Exceptions are Senftleben-König (2014) and Faggio and Overman (2014), who examine German districts and English Local Authorities, which are somewhat comparable to local labor markets.

Table 3. Overview of public-to-private multipliers.

Paper	Region / Relocation	Level of Analysis	Def. Of Public Employment	Shock Size	Period	Method	Private Sector Employment / Total Employment	Industry / Manufacturing / Tradable Employment	Other parts of private sector (Services) / Non-tradable Employment	Unemployment	Population
Becker et al. (2021)	DE Gov Move to Bonn after WWII	City Level	Public administration and social security administration (excludes health, education, state-owned enterprises)	21,428 jobs or ~289% (15,637 difference between treatment and control or 210%)	1925-1987 (62 yrs)	Theoretical Model (Economic Geography) Empirical Strategy (Difference-in-Differences & Synthetic Control)	0.86	- 0.19	1.05	Not analyzed	Not analyzed
Faggio and Overman (2014)	Employment changes at the English Local Authority level (UK public sector expansion in health and education)	English Local Authority	Main analysis: Public sector jobs are those in public corporations, nationalised bodies, central government and local authority. Additional Analysis: Three sectors: SIC75 (public administration & defence; compulsory social security); SIC80 (education); and SIC85 (health and social work). This classification ignores the fact that a proportion of the services in division 80 and 85 are actually provided by the private sector (e.g. private schools, hospitals)	246,400 jobs or 5.8%	2003-2007 (4 yrs)	Shift-Share IV (Relocations and Seats won by the labour party at the 1983, 1997, and 2005 elections as alternatives)	No sign. Effect / 0.08	- 0.4	0.5	No significant effec	No significant effect on working age population
-	-	-	-	-	1999 - 2007 (8 yrs)	-	- 1.0	- 0.78	No significant effect		

Faggio (2019)	UK Lyons Review	Census Output Areas	Central government employment, including government departments, non-ministerial departments, executive agencies, and executive Non-Departmental Public Bodies (NDPBs). This excludes jobs in health (NHS), schools, police forces, local authorities and Extra-Territorial Organizations and Bodies (SIC99)	25,000 jobs	2003-2007	Difference-in-Difference with Treatment Intensity Framework	1.146	No significant effect	1.152	Not analyzed	Not analyzed
	-	-	-	-	2003-2010	-	Positive, but insignificant effect	- 0.173	0.344	Not analyzed	Not analyzed
Faggio, Schlüter, vom Berge (2022)	DE Gov Move from Bonn to Berlin in 1999 (1996-2003)	Establishment / Plant Level	Public Sector employment (SIC75), foreign representations (SIC99), and partly special interest group employment as in political parties, trade unions, industry lobbying groups and consumer interest groups (SIC91)	15,000 government-related positions (Inc. Other policies: net gain of about 18,000 jobs for Berlin)	1998-2002	Long-Differences, Dynamic estimation, Event Study	1.33-1.37 (**Including** the public job)	No significant effect	1.33-1.37 (**Including** the public job)	Not analyzed	Not analyzed
Jofre-Monseny et al. (2020)	Spanish Public Sector Growth after Franco's death	City Level	Public administration (including police and military forces), education, and health	1.8 million public sector workers (133%)	1980-2001 (21 yrs)	Spatial Equilibrium Model with Search and Matching (Simulation of Increase in public employment by 50%)	1.6 (**Including** the public job!) 0.6 Pure Multiplier	-0.420	0.791	**-**0.4 percentage points.	Active: 1.576
-	-	-	-	-	-	2SLS (Capital City Status)	1.8 (**Including** the public job!) 0.8 Pure Multiplier	0.029	0.866	No significant effect	Active: 2.3 Working-age: 2.829 Total: 3.733

Auricchio et. al. (2020)	Public Employment **contraction** due to decrease in the replacement of retirees in Italy	Municipal Level	Public institutions including administration of the state and the economic and social policy of the community, education, health services, excluding state-owned enterprises, NGOs	-11%	2001-2011 (10 yrs)	Spatial Model with Mobility Costs Shift-Share Instrument	0.7	0.586	No significant effect	-0.175	-0.903 (Working age population)
Lee et. al. (2024)	Public sector entity relocations in South Korea for equitable growth across regions.	Neighborhood Level	Public sector employment positions (government entities, excluding military and police)	52,808 public-sector employees relocated in total, on average ~2900-900 = ~2000 jobs on average or 222% on average	2011-2017 (6 yrs)	Difference-in-Difference with Treatment Intensity Framework and Event Study Model.	0.99	-0.01	0.96	Not analyzed	3.47 (2.08 same city 0.74 non-SMA 0.65 SMA)
Senftleben-König (2014)	DE, not specific policy, but public sector **contraction** period	District Level	Pubic Administration and defense, education, health and social work. Regulated industries that provide public goods also excluded like mining and quarrying, electricity, gas, and water supply, transport and communication, extraterritorial organizations and bodies.	Unknown. -1% contribution to overall job growth 03-07	2003-2007	Bartik Shift-Share Instrument	0.738 (Statistical Office data) 0.528 (SIAB IAB data)	0.560	No significant effect	No significant effect	No significant effect on labor force or net migration

3.3.3 National vs. Targeted Public Employment Changes

Studies examining the impact of national public sector size changes between censuses, including Faggio and Overman (2014), Senftleben-König (2014), and Auricchio et al. (2020), employ a shift-share instrumental variable (IV) approach adapted from Card (2009)'s work on immigration. Auricchio et al. (2020) further refines this instrument by considering sectoral variations within the public sector.

Studies with a national geographical focus find that the addition of one public sector job results in the crowding out of more than half a job in the private sector, particularly within the traded sector. Notably, Faggio and Overman (2014) are an exception, identifying a positive impact on the services sector. Common to these studies is their analysis of changes in the size of the national public sector, which fails to account for local economic structure variations that may lead to differentiated effects being averaged out. For instance, while Berlin might benefit from a reduction in public sector size to bolster its growing private sector, a smaller city could benefit from an increase in public jobs to reinvigorate its labor market. Thus, the overall negative effect observed might conceal localized outcomes based on economic structures.

Auricchio et al. (2020) address this gap by examining regional differences between Northern and Southern Italy and finding a more pronounced effect in the South. However, they do not disaggregate the results further to analyze intra-regional localities within either the North or South. They focus on public agencies providing local public goods that were artificially inflated to create local jobs.

Conversely, analyses focusing on programs that are designed as place-based policies and focus subsets of localities, such as provincial capitals in Spain (Jofre-Monseny et al. 2020), underdeveloped regions in the UK (Faggio 2019), and South Korea (Lee et al. 2024), identify a positive multiplier effect on private sector employment predominantly originating from the services sector. They also report a marginally negative impact on manufacturing employment, with estimates ranging from one-tenth of a job (Lee et al. 2024) to 1.7 jobs (Faggio 2019) lost for every ten new public sector jobs created in the short run, with no significant effect in the long run. Table 3 provides a comprehensive breakdown of these studies, including detailed multiplier sizes. Although these studies benefit from more credible identification strategies due to their focus on singular interventions, they are somewhat limited by the non-random selection of receiving locations and lack of prior knowledge regarding the geographical distribution of public sector relocations.

The theoretical framework above outlines that productivity and amenity spillovers factor in the size of the public-to-private employment multiplier. However, this relationship is barely confirmed by the empirical literature. While reduced form evidence in Becker et al. (2021) hints at a potential effect of amenity spillovers in Bonn, Auricchio et al. (2020) find no evidence supporting either type of spillover.

Instead, other empirical determinants seem to play a role in the size of the public-to-private employment multiplier. According to Bartik (2020b), the employment-to-population ratio influences the size of the jobs multiplier for all place-based policies, not only public employment reallocation policies. Lee et al. (2024) find similar results for the case of public sector relocations in South Korea. The study suggests that the

local employment multiplier is positively associated with the baseline unemployment rate. Additionally, Lee et al. (2024) finds that the local employment multiplier is positively associated with the size of the public employment shock and negatively associated with how distant the treated localities are from the sending location. Existing spatial general equilibrium models, which assume symmetry between regions, are yet to incorporate the observed asymmetries in local labor market structures of sending and receiving locations highlighted by these findings.

Studies also indicate that the specific placement of new agencies within the receiving locality significantly impacts the outcomes of relocations. Faggio (2019) reports that, while there is an overall positive employment multiplier effect, there is also a spatial concentration of these additional private sector jobs in proximity to the relocation site. Specifically, Faggio (2019) identifies a displacement effect for areas situated 1-3 kilometers away from the relocation sites. This suggests a centralization tendency post-relocation, implying that such relocations may contribute to the formation of new city centers. An alternative strategy posited by the Cities Centre (2021) is to situate agencies within city centers to leverage agglomeration economies.

3.3.4 Short vs. Long-term Employment Outcomes

While short-run studies suggest a positive relationship between public and private sector employment, particularly in the non-traded sector, long-run effects are ambiguous and vary significantly across studies and sectors.

Short-Run Effects: With the exception of Senftleben-König (2014), all studies identify a positive short-run relationship between public and private employment. Larger positive total job multipliers are observed by Faggio (2019) and Lee et al. (2024). This positive effect on total jobs originates from positive multipliers in the services or non-traded sector. Short-run traded sector effects remain ambiguous. Faggio (2019) and Lee et al. (2024) do not find a significant effect of public jobs on traded jobs, whereas Senftleben-König (2014) observes a positive contraction multiplier, implying that *eliminating* public jobs generates private sector jobs.

Long-Run Effects: Studies examining longer-term effects (7 to 21 years) yield ambiguous results for both total and sectoral employment. It remains debatable if the time frame used in every study can be considered the long run, thus implying that a new equilibrium is established in the local labor market. Jofre-Monseny et al. (2020), analyzing the longest timeframe (21 years), identifies a positive total private employment multiplier of 0.8, driven by the services sector, and a negligible positive multiplier of 0.03 for manufacturing. Conversely, Faggio and Overman (2014) reports a negative total private employment multiplier of -1.0, and Auricchio et al. (2020) finds a positive contraction multiplier of 0.7 if one public job is destroyed, both attributable to negative effects on traded employment. In contrast, Faggio (2019) observes no significant effect on long-run private employment and only a small negative effect on traded employment. Further research is needed to clarify these long-term impacts and reconcile the conflicting findings.

3.3.5 Other Outcomes

Other outcomes examined in the literature include the impact of public sector relocations on unemployment and population dynamics. However, these outcomes receive considerably less emphasis compared to the aforementioned employment multiplier effects. Specifically, only Jofre-Monseny et al. (2020) and Auricchio et al. (2020) investigate the ramifications of public employment changes for local unemployment rates. While Jofre-Monseny et al. (2020) document a marginal reduction in unemployment attributable to public employment relocations, Auricchio et al. (2020) report an increase in unemployment under similar conditions. Furthermore, Jofre-Monseny et al. (2020), Auricchio et al. (2020), and Lee et al. (2024) explore the influence of public employment on population size, with all three studies consistently identifying a positive effect of public agency relocations on population growth.

3.3.6 Sending Locations

An intriguing observation from the literature is that, despite limited evidence on sending locations after public agencies leave, these areas do not appear to experience significant detriments from the loss of public sector employment. Faggio (2019) identifies a marginally negative impact on sending localities in the short term. However, the magnitude of these effects is substantially smaller—by an order of ten—compared to the positive impacts associated with an inflow of government jobs in receiving locations. Moreover, these negative effects dissipate entirely in the long run. Additionally, studies analyzing public employment contractions like Senftleben-König (2014) and Auricchio et al. (2020) do not find an effect of a decrease in public employment on the non-traded sector in sending locations. Thinking about the theoretical models mentioned above in reverse, one would assume that decreasing the public sector would also translate into a decrease in the local demand for non-traded goods like local services. However, this does not seem to be the case.

3.3.7 Open Questions

Auricchio et al. (2020) propose that the relationship between public and private employment may exhibit convexity. However, it may also be the case that local labor market structure variables, particularly employment density and unemployment rates, are likely moderators of the functional form of the public-to-private multiplier. In regions characterized by low employment density and elevated unemployment rates, there is a deficit in labor demand through market distortions that can be addressed by the establishment of new public agencies. Conversely, in regions with high employment density, such as capital cities that are sending locations in most relocation cases, a reduction in public sector labor demand could potentially reallocate resources to the private sector.

While a larger public sector employment share, as highlighted by Lagravinese (2015), can mitigate economic shocks in lagging regions, the impact of relocating public agencies on public good provision efficiency remains unaddressed. Existing decentralization literature, exemplified by Ghuman and Singh (2013), emphasizes the context-dependent

nature of decentralization's impact on service quality, influenced by factors like financial autonomy and potential challenges such as corruption. However, the direct applicability of these findings to agency relocation requires further investigation. Future studies need to look further into how relocating public agencies affects the efficiency of the delivery of public goods versus traded services.

4 Conclusion

This review analyzed public employment reallocation as a place-based policy, focusing on the impact of relocating capital cities and decentralizing public agencies. The analysis synthesized existing research to evaluate the efficacy of these policies in fostering regional development.

The literature shows that capital relocation costs are difficult to quantify and vary drastically for each case. While these projects represent substantial long-term investments, their costs, ranging from 3-12% of a country's GDP, must be carefully considered alongside potential macroeconomic consequences, as demonstrated by Brasília's inflationary pressures. While green capitals offer the potential for more sustainable urban lifestyle, their construction and operation present ecological trade-offs, such as habitat loss and increased resource demands, making the overall environmental impact uncertain.

Overall, planned capitals successfully attract significant population growth, sometimes leading to (intended) shifts in the capital's ethnic composition. However, the impact on the overall national population distribution is often less substantial than expected. Relocating a capital city stimulates local economies and local labor markets, primarily through private sector growth in services, but this growth can be lead to a sectoral shift in the local economy.

While research is limited, the case of Rio de Janeiro suggests that former capitals may experience a decline in relative economic importance following a capital relocation but not necessarily a decline in absolute terms, as evidenced by unaffected population and employment levels.

In terms of decentralization programs that relocate public agencies away from the capital to inland regions, nationwide studies often show a crowding-out effect of public sector jobs on private sector employment, while evaluations focusing on targeted relocations to specific lagging regions find positive public-to-private employment multipliers, especially in the services sector. Although spatial general equilibrium theory predicts that productivity and amenity spillovers mediate the employment multiplier effects, empirical findings indicate that initial conditions in receiving locations, such as a high initial unemployment rate and a low employment-to-population ratio, lead to a higher private employment multiplier. While short-run effects on private employment are generally positive (driven by the non-traded sector), long-run effects remain ambiguous and require further research. Public sector relocations generally lead to population growth in receiving areas, but effects on unemployment are mixed. Sending locations show minimal negative impacts from public job outflows.

To summarize, public employment reallocations may hold significant potential as a

place-based policy tool. Because of the substantial magnitude of the public wage bill, spatial redistribution of public employment could exert a considerable impact without necessitating an expansion of the public sector itself. Empirical studies predominantly indicate a positive local multiplier effect on service sector employment while simultaneously reporting little to no significant adverse impact on the regions from which agencies originate.

Further research is needed to determine the long-term effect on traded manufacturing jobs. Given the over-representation of women in the public sector (Gornick and Jacobs 1998; Gomes and Kuehn 2019) and their disproportionate vulnerability to public sector changes and austerity measures (Glasmeier and Lee-Chuvala 2011), future research should investigate the potential for a gendered effect of public employment reallocation, including its long-term implications. Finally, further analysis should be conducted within the places vs. people framework, as highlighted by Glaeser and Gottlieb (2008), to determine whether new public jobs are primarily filled by local residents affected by previous negative shocks or by new residents reshaping previously distressed areas.

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