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World cities and peripheral development: The interplay of gateways and subordinate places in Argentina and Ghana's upstream oil and gas sector

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Abstract

Serving as “gateways”, some world cities tie their wider hinterlands to global networks. The article revisits gateway–hinterland relations against the backdrop of assessments that lead to opposed conclusions on the benefits and shortcomings of integration into the world economy. Referring to the oil and gas sector in Argentina and Ghana, it answers the question of how gateways interact with subordinate places and also uncovers obstacles to peripheral development. The author finds that Accra and Buenos Aires concentrate corporate control. Argentina's capital serves as a gateway for knowledge generation and logistics too. Opportunities for peripheral development in both countries are considerable, albeit largely limited to generic services. Besides a certain concentration of business activities in the gateway cities, more important challenges to peripheral development are typical for small and medium enterprises (insufficient finance and management capabilities, unawareness of business opportunities, and the like). They include rent seeking and subcontracting. The latter leaves local companies in a particularly weak position vis-à-vis lead firms. The author argues that while integration into the world economy allows for peripheral development, the corresponding outcomes may not meet everyone's expectations. Related expectations must, therefore, be more down-to-earth than overly optimistic statements frequently made by politicians.

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1 | INTRODUCTION

As Sigler nicely summarises, “world cities research is predicated upon a hypothesis about how cities serve as strategic nodes within the contemporary global economy” (2016, p. 392). They are critical hinges in networks that crisscross the globe. As such, they tie numerous places involved in the increasingly fragmented production of goods and services together, generating impulses for peripheral development—through investment in additional activities in the region under consideration—or limiting such prospects by connections to activities elsewhere.

Several contributions by organisations and scholars involved in development policy are marked by an optimistic notion on peripheral development in global networks. Most prominently, Morris, Kaplinsky, and Kaplan (2012a, 2012b) argue that “one thing leads to another”: integration into global networks triggers local dynamics because of linkages from which peripheral sites benefit under certain conditions. The *World Development Report* from 2009 extends this optimism to the related role of world cities. It suggests that developing countries tie themselves to nearby “leading areas”, meaning agglomerations such as world cities that generate impulses for their wider hinterlands (World Bank, 2009). Scholvin (2017) shows how Cape Town interlinks places all over sub-Saharan Africa globally, exerting positive effects in some cases. Breul, Revilla Diez, and Sambodo (2019), conversely, suggest that world cities serve as “gateways” and are marked by “filtering mechanisms” that hamper peripheral development.

In spite of its merits, the article by Breul and his co-authors is overly pessimistic. It reveals that sophisticated business activities hardly relocate to peripheral locations, but how realistic are corresponding expectations? Moreover, is concentration in a world city that serves as a gateway the only and/or the most important obstacle to peripheral development? By assessing different functions of gateways, this article revisits the relationships of gateway/world cities and subordinate places. It focusses on the oil and gas sector in Argentina and Ghana, answering two questions: How do world cities that serve as gateways interact with subordinate places? What factors—other than the gateway city—hamper peripheral development?¹

It is shown that corporate control relating to business activities in the respective national hinterlands takes place in Accra and Buenos Aires. Argentina's capital also serves as a gateway for knowledge generation and logistics, thus concentrating many activities necessary to explore and extract hydrocarbon resources. Technical services, meanwhile, are provided from places closer to oil and gas fields. In Ghana, not only service provision, but also logistics and transport functions are carried out in a peripheral town: Takoradi. This decentralisation—along with the incorporation of local firms into the sector and related processes of upgrading/upskilling—indicates that integration into the world economy has positive effects on the periphery. Nonetheless, firms from resource peripheries largely provide generic services and there are also important obstacles to peripheral development. These are challenges typical for small and medium enterprises (SMEs), rent seeking, and subcontracting by non-local lead firms rather than filtering mechanisms by Accra and Buenos Aires.

The remainder of this article is structured as follows: the first section introduces the conceptual background. The state of the art on world cities serving as gateways is summarised with particular regard to the controversial evaluation of developmental consequences. Afterwards, the case selection and research methodology are explained. The third section presents the empirical findings. The article concludes with policy implications and ideas for follow-up studies.

2 | CONCEPTUAL BACKGROUND

The gateway concept offers a particular perspective on world cities. It draws attention to city–hinterland relations and the manifold ways in which world cities integrate their respective

hinterlands into global networks (Scholvin, 2019b, 2020, 2021; Scholvin, Breul, & Revilla Diez, 2019; Scholvin, Françoso, Mello, Breul, & Hiratuka, 2019). A gateway city can be defined as “an entrance into (and necessarily an exit out of) some area” (Burghardt, 1971, p. 269). Sigler’s (2013) related concept of “relational cities” accordingly deals with intermediary services, ranging from offshore banking to container shipping. Others have assessed gateway cities as nodes in flows of foreign investment and trade (Chubarov & Brooker, 2013; Grant, 2008), international migration (Price & Benton-Short, 2008), and maritime transport (Lee & Ducruet, 2009; Notteboom, 2007). Short, Breitbach, Buckman, and Essex (2000) argue that all cities are gateways to some extent, globalising their spheres of influence in cultural, economic, and political terms. Contributions that stand in the tradition of the Globalisation and World Cities (GaWC) research network more narrowly deal with corporate control and corporate service provision (among others: Parnreiter, 2010, 2015; Parnreiter, Haferburg, & Oßenbrügge, 2013; Rossi, Beaverstock, & Taylor, 2007; Taylor, Walker, Catalano, & Hoyler, 2002).

An analysis that aims at the division of business activities between gateway cities and hinterland locations, and seeks to derive conclusions on peripheral development must go beyond the GaWC approach (Coe, Dicken, Hess, & Yeung, 2010). Scholvin, Breul, et al. (2019) as well as Scholvin, Françoso, et al. (2019) therefore suggest that world cities that serve as gateways fulfil up to five functions, being (a) hubs for logistics and transport, (b) sites of industrial processing, (c) places of corporate control and (d) service provision, as well as (e) locations where knowledge is generated. Service provision is more than corporate services on accountancy, advertising, banking/finance, and the law. These stand at the core of GaWC research, but integration into the world economy also depends on technical services that are not available in many locations in the Global South, at least not to the sophistication required in some sectors.

In addition to characterising gateway cities in Argentina and Ghana along four of the five just mentioned functions, this article contributes to better understanding their relevance for peripheral development. There are numerous endogenous and exogenous factors that determine economic dynamics in the periphery of the world economy. Gateway cities are one condition among many. Nonetheless, critical relevance has been ascribed to them. As noted, the 2009 *World Development Report* suggests that developing countries bind themselves to such agglomerations, allowing for the free flow of capital, goods, and people so as to benefit from impulses that these leading areas supposedly generate. After an initial period of increasing concentration in the leading areas, more and more economic activities are expected to spread to the periphery, inducing development there (World Bank, 2009). Scholvin (2017) finds such processes in the sub-Saharan African oil and gas sector, which benefits from Cape Town interlinking it globally.

There is, however, an increasingly large body of academic literature that maintains that the periphery hardly develops in spite of its integration into the world economy. These publications focus on the failure of diversification of the local economies under consideration and the formation of enclaves therein (among others: Arias, Atienza, & Cademartori, 2014; Atienza, Lufin, & Soto, 2018; Fabinyi, 2016; MacKinnon, 2013; Murphy & Carmody, 2015). Breul et al. (2019) argue that gateway cities concentrate sophisticated activities that should rather disperse to peripheral sites in order to structurally transform the corresponding local economies. The reason for the concentration in gateway cities is that institutions in resource peripheries and world cities that serve as gateways bargain with extra-regional corporations, seeking to attract foreign investment. For sophisticated, high value-adding tasks, gateway cities usually outcompete peripheral locations. The existence of a gateway decreases the need to carry out activities such as logistics and transport in the periphery. Gateway cities also benefit from path dependencies, once firms have invested in industrial processing or located corporate control there. Breul and his co-authors associate these processes with the “dark side” of economic geography—a

term coined by Phelps, Atienza, and Arias (2018). Referring to Coe and Yeung (2015), Breul and his co-authors suggest that the integration of peripheral locations into global networks can sometimes be unsuccessful in terms of development *because of* the related role of gateway cities.

Regardless of the causes, the answer to the question of whether integration into the world economy and the related role of gateway cities hamper peripheral development or are conducive thereof depends on one's expectations concerning economic dynamics in the periphery. Argentina's former president Mauricio Macri claimed that unconventional oil and gas in north Patagonia “will cause a revolution of employment in Argentina” (*Perfil*, 2017, author's translation). He also stated that these resources “will transform us into a world power in energy” (*Clarín*, 2019, author's own translation). When Ghana's considerably large Jubilee field was discovered in 2007, President John Kufuor told the BBC (2007) that “with oil as a shot in the arm, we're going to fly [...]. We're going to really zoom, accelerate [...]. You come back in five years, and you'll see that Ghana truly is the African tiger, in economic terms, for development”. Ghana did not, obviously, turn into the African tiger by 2012. One may also doubt whether the on-going exploitation of Argentina's Vaca Muerta field will revolutionise employment everywhere between Cape Horn and the Iguazú Waterfalls, and turn Argentina into an energy world power.

Neither Kufuor nor Macri explained how and why resource abundance would have such tremendous effects on the Argentinean and Ghanaian economy, respectively. The point to be made here is that such expectations exist and they have shaped the political debates in the two countries. Breul and his co-authors would probably agree that the just mentioned hopes are unrealistic. In their article, they elaborate on the relocation of basic tasks from Singapore—the gateway city—to two neighbouring countries. For example, oil field service providers such as Baker Hughes and Schlumberger have established facilities in Vietnam. They can be expected to train Vietnamese staff and suppliers, inducing process and product upgrading in what Gereffi, Humphrey, and Sturgeon (2005) call “captive relations”.² A Vietnamese supply industry for activities such as drilling has emerged. In Indonesia, indigenous companies are involved in services such as catering, logistics, and security as well as simple manufacture and repair of equipment. Some Indonesian firms even carry out geophysical data analysis and offshore drilling. The aforementioned article by Scholvin, Breul, et al. (2019) provides further examples of how Singapore induces peripheral development in the oil and gas sector.

Yet, it appears that this is considered unsatisfying. Breul and his co-authors point out that oil field service providers and other important firms in Indonesia and Vietnam are not, usually, indigenous. Sophisticated equipment and technology are imported instead of being produced domestically. Expert staff fly in from Singapore. The authors hence conclude that the gateway city filters gains at the expense of subordinate places. There are, however, less than a dozen firms worldwide involved in technically sophisticated oil field service provision. No matter whether oil and gas is extracted in a least developed country like Equatorial Guinea, an emerging economy such as Vietnam, or in the Global North, say in Norway—indigenous firms in the most sophisticated segments of the upstream sector are rare or non-existent. The equipment they use is produced at a few sites worldwide; so is new technology, for instance for ultra-deepsea drilling. Experts belong to a globally mobile knowledge elite.

It is striking how differently others see the prospects of resource peripheries. The argument at the heart of various studies by the Policy Research in International Services and Manufacturing (PRISM) unit at the University of Cape is that lead firms—in extractive industries and other sectors—concentrate on their core business. They not only search globally for lowest-cost suppliers, but also have a preference for firms close to where they operate. Particularly in developing countries with their considerable challenges regarding logistics and transport, the need for spatial proximity is high. Not only backward and forward linkages thus result from integration into global networks. Fiscal and horizontal ones are created as well, provided that certain conditions are fulfilled (Morris et al., 2012a, 2012b).

Quite interestingly, the empirical findings of PRISM research are not that different from what Breul and his co-authors observe in Indonesia and Vietnam. Resource peripheries usually provide semi-qualified labour and generic services, whereas companies from abroad engage in activities that are intensive in capital and knowledge. PRISM scholars, however, see something positive in locally provided generic services, even if they are as simple as catering and security, and even if their contribution to diversifying the local economies under consideration is uncertain at best.³ Breul and his co-authors as well as the aforementioned scholars who concentrate on diversification apparently have higher expectations on peripheral development.

Against this backdrop, it is worthwhile to reassess the interplay of gateway/world cities and peripheral locations, investigating the division of business activities between different sites that are connected in global networks. Further to that, this article builds inroads into better understanding obstacles to peripheral development, including the impact of gateway cities but not being limited to it.

3 | CASE SELECTION AND METHODOLOGY

Numerous gateways globally interlink resource peripheries in South America and sub-Saharan Africa (or anywhere else in the world). In order to build inroads into a topic not covered well by existing research such as the relationships of gateway cities and subordinate places, diverse cases are most suitable. Diverse cases do not necessarily mirror the distribution of the variation of the phenomenon in consideration, but they come close to covering the full variation. In qualitative research, diverse cases are the best path towards representativeness (Seawright & Gerring, 2008).⁴

With regard to case selection, it appears worthwhile adding that the aforementioned article by Breul et al. (2019) refers to an extreme case: Singapore, an “alpha +”- world city according to the latest GaWC (2018) assessment, which offers one of the most sophisticated business environments worldwide and competes with resource peripheries in nearby developing countries. It is not surprising that Singapore concentrates so many activities related to oil and gas at the expense of its neighbourhood. This means that the study by Breul and his co-authors does not allow for generalisation. It is unlikely that all gateway cities exert filtering mechanisms to the extent and in the way that Singapore does. Analysing such an extreme case is rather helpful for explorative research.

Cities in Argentina and Ghana, meanwhile, are suitable as diverse cases because of the different levels of development of the two countries. Despite its shaky economy, Argentina is a high-income country, according to the World Bank’s (2019) definition. Buenos Aires once belonged to the top world cities—being culturally and economically at par with London and Paris—but stagnated in the course of the last century, as much as the entire country did. Today, GaWC (2018) researchers consider Buenos Aires an “alpha”-world city, comparable to Frankfurt and Melbourne regarding its relevance for the world city network. Ghana, on the contrary, is a lower middle-income economy. More than half of the adult population earn their living in agriculture and fishing. The rise of Accra to what Grant (2012) calls a “globalizing city” dates back to liberalisation policies introduced at the national scale in 1983. According to GaWC, Accra is a “gamma +”-world city, meaning as unimportant as Cleveland or Glasgow. It is, hence, reasonable to expect Buenos Aires to attract more sophisticated business activities than Accra, also implying more potential for relocation to peripheral sites.

What is more, oil and gas extraction is a recent phenomenon in Ghana. First onshore wells were drilled as early as 1896. In the 1970s, rudimentary offshore exploration began. Commercially viable findings were made in 2007. Argentina, conversely, has been exploiting hydrocarbons since 1907. It can be expected to feature expertise in the oil and gas sector—held by firms based in Buenos Aires and at peripheral sites. With regard to Ghana, one would assume that the country depends on foreign

firms exploring and exploiting its hydrocarbon resources. They have taken first steps to expand into this new market, probably concentrating their activities in Accra instead of more peripheral locations. The role of indigenous companies is most likely limited to the provision of generic services.

The oil and gas sector offers practical advantages for this study—besides the fact that it makes the findings easily comparable with those by Breul and his co-authors. First, the oil and gas sector is marked by a clear linear configuration, with the location of key assets and major players being easy to identify. Second and somewhat counterintuitively, the sector is relatively transparent. Basic information on investments, ownership of/service provision to oil and gas fields is available online. During his field research, the author of this article found lead firms and small enterprises to be accessible for interviews and willing to provide details on their location strategy and cooperation with other companies.

The oil and gas sector consists of down-, mid-, and upstream activities. Upstream includes searching for oil and gas fields, drilling wells, and operating these wells. Midstream involves transport, storage, and wholesale marketing of crude and purified/refined products. Downstream comprises refining crude oil and purifying raw natural gas, and marketing and distribution of consumer products. Integrated oil companies such as Chevron and Shell have separate business units for down- and upstream that hardly interact. Other lead firms—Anadarko and Puma Energy, for instance—only engage in either down- or upstream. Suppliers are hardly ever involved in both sub-sectors. For these reasons, the following empirical analysis is limited to upstream. The gateway function of industrial processing—for example, by petrochemical industries—is not covered.

In addition to existing academic literature, information has been obtained from the Energy Information Administration and the website “A Barrel Full”. The latter provides information on all active oil and gas fields worldwide, indicating the respective operators and most important service providers. Office locations of these firms can be identified online, leading to a first overview of location patterns.⁵ During research trips in 2016 and 2017, narrative, open-ended interviews were carried out with business lobbies, public authorities and, more important, local and transnational enterprises. The objective of the interviews was to learn about location strategies, inter-firm relations (especially with regard to local suppliers), the intra-firm division of labour, and advantages that Accra and Buenos Aires as well as subordinate places offer.

The empirical analysis is thus largely based on information obtained from interviews. As far as possible, the corresponding insights are triangulated with academic literature and sources of descriptive data. This implies not only a strength in explaining causal mechanisms that lead to/work against peripheral development, but also shortcomings in terms of quantification. Qualitative approaches have, nonetheless, become critical in research on economic networks. As Vind and Fold point out, it is impossible to capture the role of corporate control and corporate services (as well as other features, I would add) for these networks “without intensive fieldwork, including corporate interviews; databases and surveys cannot provide the data needed” (2010, p. 72). In other words, qualitative research is able to explain specificities of networks, which quantitative approaches only map (Watson & Beaverstock, 2014).

In the following pages, reference is made to 40 interviews—23 from Argentina and 17 from Ghana—out of a total of 51 conducted for the research presented here. The interviews not referred to revolved around topics that are not central to the article (corruption in Argentina, for instance). No contradictory information has been omitted. The interviewees—consultants, leading executives of large companies, and directors of small businesses—were identified via LinkedIn and by snowball sampling. Except for a few cases, the interviews were conducted with one interviewee at a time. A guideline of eight questions that cover the objectives mentioned in the next-to-last paragraph was used. The questions were adapted slightly before each interview, reflecting on the interviewee's area

of expertise and the exact nature of his/her company or organisation. The interviews lasted 20 to 80 minutes. They were recorded and later structured along the four relevant functions of gateway cities (logistics and transport, corporate control, service provision, and knowledge generation). Direct quotes from the interviews in Argentina are the author's translation.

4 | EMPIRICAL FINDINGS

Each of the following sub-sections begins with background information on the upstream oil and gas sector. Afterwards, the role of gateway cities—Accra and Buenos Aires—is assessed along the functions of logistics and transport, corporate control, service provision, and knowledge generation. Opportunities for peripheral development are explained as well as obstacles in this regard. Tables 1 and 2 further below summarise the findings.

4.1 | Accra and the hinterland in Ghana

In 2007, oil deposits were found off the coast of Ghana, close to the border with Ivory Coast, arising considerable interest among oil majors. The largest field—the Jubilee field, operated by Tullow in cooperation with Anadarko, Kosmos, and the Ghana National Petroleum Corporation—contains reserves of 600 million barrels of oil equivalent (A Barrel Full, 2014b). Commercial production began in 2010. The more recently discovered Cape Three Points field (operated by Eni in partnership with Vitol and the Petroleum Corporation) as well as the Tweneboa, Enyenra, and Ntomme fields (operated by Tullow, its Jubilee partners, and Sabre) will further increase Ghana's oil and gas production (A Barrel Full, 2014a, 2019).

Accra has become the key place for corporate control in Ghana's emerging oil and gas sector. It is not only the capital and commercial hub of the country, but also the most internationalised city. The oil findings have given a boost to this role of Accra, best exemplified by the expansion of new urban districts, where transnational companies concentrate in close proximity to Ghana's only international airport (Grant, 2012). Interviewees explained that the country managers of all oil majors, the Petroleum Corporation, the Ghana Petroleum Commission, which is the upstream regulator, and other important public authorities are located in Accra.⁶ Two summarised the relevance of the city, saying that “everything is in Accra”.⁷

The concentration of corporate headquarters offers prospects for local businesses. An indigenous firm with 275 employees provides 90 vehicles and personal driving services to Tullow, for example. It works with local car dealers and providers of spare parts such as batteries, and contracts repair services in Accra, indicating backward linkages that affect the wider economy of the city.⁸ From a more general perspective, a consultant explained that Ghanaian firms plug into the oil and gas sector as providers of generic services—similar to the just mentioned case. He added that it is unrealistic to expect Ghanaian businesspeople and enterprises to take a lead role for upstream activities or venture into sophisticated services such as drilling and seismic studies because of capital intensity and the associated high risk.⁹

Regardless of the level of sophistication, service provision for the upstream sector is not, however, concentrated in Accra—with the exceptions of driving services and tasks related to office buildings such as cleaning, gardening, and security. Although firms that provide technical services for the upstream sector usually manage their business activities from Accra, the physical work takes place in Takoradi—about 230 kilometres west of Accra and connected to the capital by a road in relatively

good condition and several non-stop flights a day that take 40 minutes.¹⁰ Once a sleepy coastal town, Takoradi has become the operational hub for the upstream sector because it is the closest harbour to the offshore fields. Land, labour, and housing have been profoundly and often negatively affected by the oil boom (Obeng-Odoom, 2009, 2014b; Oteng-Ababio, 2016). Takoradi—not Accra—serves as logistics and services gateway to Ghana's oil and gas fields, with specialised service providers such as Belmet 7, Oceaneering, and the Expro Group carrying out physical operations there. An interviewee explained that his firm receives equipment from overseas, verifies its proper functioning, stores it at the port of Takoradi, and dispatches it to the nearby oil and gas fields whenever needed.¹¹ Having such a hub in close proximity to the site of operation is a practical necessity: “we cannot send equipment back to the U[nited] K[ingdom] [...] for servicing”, said another interviewee.¹²

This locational pattern also applies to Ghanaian companies, which provide generic services. An interviewee involved in freight forwarding explained that the offices for administration and customer contact are in Accra, whereas most of the actual work takes place in Takoradi.¹³ Another freight forwarder has the head office in Accra too—“within five kilometres of [the headquarters of] all major oil and gas firms”.¹⁴ The bulk of business is in Takoradi. Rather than filtering gains, Accra hence bundles corporate control and interlinks the physical work done in Takoradi. This way, it induces economic dynamics at a subordinate place, which is particularly surprising because Takoradi did not have a basis for oil and gas-related development just 15 years ago.

Ghanaian firms also enhance their skills and gain new ones because of their involvement in the sector, as they must meet strict standards before they can bid for tasks outsourced by oil and gas companies. A third freight forwarder hired foreign health and safety trainers when they decided to expand into oil and gas. Now, they are “formalising everything, making sure that everything can be accounted for”.¹⁵ One of the aforementioned firms has introduced a digitalised database accessible for customers. It has also begun using GPS tracking for its lorries.¹⁶ The upgrading of capabilities is “an on-going process. You may not have everything that [the client] requires when it comes to the skills [...], but you have at least a reasonable part of [what it demanded]”.¹⁷ These forms of upskilling hold an important potential for Ghana as a whole. A consultant stressed that Ghanaian professionals—for example welders—do not, at present, meet international standards. Foreign investment in oil and gas is an opportunity to “lift the entire economy up to these standards”.¹⁸

An interviewee from one of the first oil majors that invested in Ghana remembered that when they arrived in the country, “there was a vacuum here—not even catering [could be contracted to our standards]”.¹⁹ He added that the situation has changed by now. Joint ventures of Ghanaian and foreign firms—with the former holding 51% of the shares—have become typical for drilling, rig washing, and well services, among others. In these partnerships, the Ghanaians bring in local contacts and labour, while the foreigners have expertise, technology, and access to finance.²⁰ This shift reflects legislation introduced at the beginning of this decade, according to which the share of foreign products, services, and staff in the oil and gas sector must be reduced to almost 0% from the beginning of extraction until 10 years later (Arthur & Arthur, 2014). Joint ventures do not, apparently, fall under these restrictions.

In exceptional cases, Ghanaian firms have managed to internationalise—not only, but also because of their involvement in oil and gas. An entrepreneur whose company is based in Takoradi explained that they ventured into oil and gas in 2007. With prior experience in the disposal of toxic waste in the shipping industry, they started handling such material produced by oil field operators. This sector proved to be extremely profitable, providing substantial amounts of money to the company and forcing it to increase its capabilities. Today, they have operations in Benin, Liberia, Sierra Leone, and Togo. Ivory Coast and Senegal are also interesting markets according to the interviewee because hydrocarbon extraction on a relatively large scale may begin there soon.²¹

However, there are considerable challenges to locally embedding the oil and gas sector. As noted, indigenous firms hardly ever venture into the provision of sector-specific, sophisticated products and services. Even in joint ventures, their contribution is usually limited to generic assets. This reflects the fact that Ghana has a very short history of oil and gas extraction. Ablo and Overå (2015) report that indigenous firms are, moreover, often not aware of business opportunities, unless they may rely on personal contacts at the Petroleum Commission. The low efficiency of state institutions regarding business registration, certificates on sales taxes, and similar issues creates additional obstacles. Ablo (2017) adds that small enterprises tend to fail to pre-qualify for calls for bids because potential clients deem their management insufficiently professional, their financial capacities and insurances too low (or non-existent), and their experience in providing the products and services in consideration too little (or insufficiently certificated).

In another publication, Ablo (2015) explains in this regard that the impact of the Enterprise Development Centre in Takoradi has been mostly limited to a few relatively large companies with prior experience in the mining and shipping industries. Their business activities include installation of machinery, logistics services, piping, and thermal insulation, among others. The centre provides business training on book keeping, safety procedures, and similar issues. It serves as an entry point to the oil and gas sector for Ghanaian firms. Yet, the firms that have completed the programmes offered by the centre are not overly successful in obtaining oil and gas contracts according to Ablo. He concludes that the centre has largely failed to meet its objective to support SMEs—typically involved in catering, cleaning, and the recruitment of rig workers—to improve their competitiveness and take advantage of business opportunities.

Conditions being unfavourable for indigenous firms are not the only challenge to peripheral development. One of the aforementioned interviewees explained that “some [local] companies have priced themselves out. It's been cheaper for me to buy an item in the UK, and get it shipped across here, and pay customs and tax and clearance than it is to actually obtain the item here”. He continued, saying that “the items are not [from] here. [Local providers] go out and source them, but they really put a mark on them. [...] We had one [local] company trying to charge us 100 [US] dollars for a certain item, but you get it on Amazon for [USD] 9.99”.²²

Some foreign companies encourage the practice of distribution through indigenous firms, as they put potential local suppliers in touch with their preferred equipment manufacturers from abroad.²³ In theory, this constitutes a path towards upgrading for the intermediaries—by maintenance and repair of the products they distribute as a first step and later by own production. Reality appears to be different: “you may have a company in Takoradi that goes to a company in Accra that has actually brought this item in. So [the firm in Takoradi] purchases it. [...] By the time it comes to the end user, it's [...] unrealistically expensive”.²⁴ What this statement shows is that Accra serves as a gateway city. Traders based in Takoradi depend on their partners in the capital to access global markets. One may argue that this intermediary role of Accra reveals filtering mechanisms because players in the gateway city capture a considerable share of the profits or try to do so. Still, rent-seeking behaviour is the decisive obstacle to peripheral development, as it prevents local firms from plugging into global networks and appears to predominate over efforts towards upgrading. With Ghanaian enterprises being intermediaries that import foreign-manufactured products, the domestic linkages of the oil and gas sector also remain shallow, meaning that much value addition occurs abroad.

Furthermore, legislation on local content is abused by some local suppliers. An interviewee explained that “the local content law [forces] you to give preference within [a price margin of] 10% to indigenous companies [...]. If I buy welding electrodes in Europe, I will pay [...] 6 [US] dollars per package. If I go to the dealer of the same brand, an official dealer that is a joint venture [here in

TABLE 1 Gateway functions of Accra and hinterland locations, and implications for development

Gateway function	Accra	Hinterland	Implications for development
Logistics and transport	International airport	Harbour of Takoradi (in close proximity to oil and gas fields)	See “service provision”
Corporate control	Administration/head offices of all firms; public authorities	None	None in terms of controlling the sector, with the exception of the Petroleum Corporation
Service provision	Driving services and work related to office buildings	Operational bases for all services related to exploring and extracting oil and gas	Provision of generic services by local firms; backward linkages; upgrading/upskilling; internationalisation in exceptional cases
Knowledge generation	None	None	None

Source: Author's own draft.

Ghana), I will pay [USD] 10, and the indigenous companies know the price. So they charge you [USD] 11 [for the electrodes they import from Europe] and you have to go to them because it is the law”.²⁵

Table 1 summarises the findings on the interplay of Accra and its hinterland. Following the interviews conducted by the author and available academic literature, knowledge generation related to the oil and gas sector does not occur in Ghana.

4.2 | Buenos Aires and the Argentinean hinterland

Argentina is South America's largest natural gas producer and a significant producer of oil. Its corresponding reserves amount to 2.4 billion barrels of proven conventional oil, 27 billion barrels of technically recoverable shale oil as well as 11.1 trillion cubic feet of conventional and unconventional natural gas. Most of the unconventional resources are part of the Vaca Muerta field in north Patagonia, which is one of the largest deposits of shale oil and gas worldwide (Energy Information Administration, 2017). The attractiveness Argentina's upstream sector has been boosted by policies pursued since the 2015 presidential election. A stimulus programme for natural gas extraction was launched in that year. Foreign exchange controls were lifted. The conservative Macri government, whose mandate ended in December 2019, also successfully negotiated with investors and trade unions so as to reduce the costs of operation and avoid strikes.²⁶

The gateway role of Buenos Aires—just like the one of Accra—is based on corporate control with regard to the national scale. Across all interviews conducted in that city, it was stated that important Argentinean and foreign firms concentrate their administrative, commercial, and technological activities there. Strategic decisions on the Argentinean hinterland are taken in Buenos Aires. Interviewees explained that the reason for this is the density of key players in the city—in particular providers of corporate services on finance and the law, specialised suppliers, oil majors (including the semi-statal giant YPF), and the government.²⁷ On several occasions, interviewees began their response to the question about the location advantages of Buenos Aires by saying “Dios está en todos lados, pero atiende en Buenos Aires”—God is everywhere, but his office is in Buenos Aires.²⁸ Even medium-sized firms from provinces rich in oil and gas often have an office in Buenos Aires—for “relational purposes”, as an interviewee explained.²⁹

Very different from Ghana, corporate control of the Argentinean upstream sector is exerted by domestic and foreign firms. Next to YPF, there are players from abroad such as Shell and Wintershall as well as Argentinean companies—Pan American Energy and Tecpetrol, for instance. They assume the roles of strategic partners and specialised suppliers. Regardless of their origin, these firms engage much more with the local economy than their counterparts in Ghana do. Most importantly, knowledge generation concentrates in Buenos Aires. Several interviewees mentioned good universities and their graduates when explaining why they carry out research-intensive activities in Buenos Aires.³⁰ The sector's lead firms also outsource geological studies to institutes in the gateway city.³¹ Exceptions from this pattern are few. Petrobras, which sold the majority of the shares of its Argentinean subsidiary in 2016, invested in a centre of applied technology in Neuquén. The centre carried out geological and engineering studies.³²

The concentration of corporate control and knowledge generation is reinforced by a soft location advantage of Buenos Aires. Its relevance should not be underestimated. Interviewees emphasised that Buenos Aires is a “cosmopolitan” city and offers “a comfortable lifestyle”.³³ Cities and towns in close proximity to Argentina's oil and gas fields, conversely, are not popular—neither with foreigners, nor with Argentineans. Interviewees highlighted that their respective companies face severe problems to persuade employees to move there.³⁴ In consequence, some oil and gas-related activities—in particular engineering and geological research—largely remain in the gateway city, even though companies may prefer to relocate them to peripheral sites. This can be seen as a filtering mechanism, yet one very different from the hard location advantages Breul et al. (2019) refer to.

Logistics and transport connect better to the concept advanced by these authors. Buenos Aires is the only hub for air travel in Argentina, although this pattern appears to be changing because of low-cost airlines now offering direct routes between provincial capitals. An interviewee explained that his firm—like most large companies in the upstream sector—is involved in projects at various locations across the country. Equipment and staff needed at more than one site is concentrated in Buenos Aires for this reason.³⁵ The harbours of the city (Puerto Nuevo) and province (Dock Sud)—the latter is located at the edge of the city of Buenos Aires—are the largest container ports in the country, with cargo handlings of a respective 845,000 and 526,000 TEUs in 2017 (Ministerio de Transporte, 2018).³⁶ Interviewees mentioned the ports and their comparatively high efficiency as location advantages of Buenos Aires.³⁷ These infrastructures reduce the extent to which logistics can be relocated to the hinterland, reducing the prospects of development there.

Although Buenos Aires is by far the largest market for industrial goods, where even firms from the interior of the country purchase some of their inputs because of lower prices,³⁸ operators resort to suppliers closer to oil and gas fields—either local firms or foreign ones with a presence there. The reason for this is the considerable distance between the resource peripheries and Buenos Aires: Mendoza and Neuquén are about 1,000 kilometres away from the gateway city; Santa Cruz and Tierra del Fuego more than 2,000. Hiring suppliers close to where their products and services are needed saves costs and time of transport. It also allows for a quick reaction to any urgent problem that might occur.³⁹ Further to that, legislation on local content refers to the provincial level in Argentina, making a certain decentralisation legally binding.⁴⁰

In order to coordinate the work on the ground, non-local firms have limited administrative capacities in the capitals of hydrocarbon-rich provinces, duplicating the structures of their national head offices there. The operational bases are located directly on site or in towns nearby.⁴¹ As an interviewee explained, offices in provincial capitals implement decisions taken in Buenos Aires.⁴² Local companies that reach a certain size largely follow the same pattern, concentrating their administration in cities such as Neuquén and running operational bases closer to oil and gas fields, in towns like Añelo

and Rincón de los Sauces, for example.⁴³ SMEs bundle administration and operation at one place, which is not necessarily the provincial capital.⁴⁴

In the province of Neuquén, the dynamics of the upstream sector has led to the establishment of administration and transport centres as well as industrial and logistics parks (Landriscini, Preiss, & Avellá, 2017). A local entrepreneur explained that he began with little experience in oil and gas, and included more and more services to the portfolio of his firm, offering to his clients what they had previously obtained from non-local suppliers.⁴⁵ Oil majors and specialised service providers are involved in upskilling labour, especially engineers. They expect their suppliers to work according to the standards that apply to them too.⁴⁶ Obviously, such a transfer of knowledge does not apply to all large corporations, but their high requirements force local firms to upgrade. Executives of a local chamber of commerce agreed that such processes are vital to SMEs because they enable them to venture into markets abroad.⁴⁷ The first step in that direction is the provision of maintenance services for equipment brought in by foreign firms, which allows local contractors to get familiar with new technology.⁴⁸ In other words, there are expectations that resource peripheries in Argentina will become “learning regions” and achieve a structural transformation as such (Scholvin, 2019a).

There are downsides to the integration into the oil and gas sector though. Labour has been heavily outsourced since the privatisation of YPF in 1993. Job creation is unstable, being closely linked to the pace of drilling (Landriscini, Robles, & Carignano, 2015). Foreign contractors such as Baker Hughes, Halliburton, and Schlumberger provide technology-intensive services.⁴⁹ Local firms typically contribute labour and carry out low-tech services—electro-mechanical services, road construction, soil movement, and transport of liquid cargo, for instance. Some of them also engage in services specific to the oil and gas sector such as well termination, which does not happen in Ghana. Kozulj and Lugones (2007) find that local companies tend to be second- and third-tier suppliers, usually subcontracted by first-tier suppliers from abroad. Oil field operators and first-tier suppliers pass the task of lowering costs to local firms and, through more flexible contracts, to subcontracted labour (Landriscini, 2017). An interviewee from a specialised service provider explained that local companies “have to improve their efficiency [...]. Today, they offer a service at 40 [US] dollars. In half a year, they have to do it for [USD] 20 and in a year, for [USD] 10”.⁵⁰

Other challenges are typical for SMEs. In some cases, much larger non-local suppliers have absorbed highly competitive local firms or headhunted their employees.⁵¹ Many SMEs fail to obtain contracts because pre-bidding assessment ascribes high relevance to their annual turnover. If it is considered too low, the respective companies will not be allowed to bid. The reason for this is that overly large projects put suppliers and their clients at risk, with the former going bankrupt and the latter being legally responsible for any unfinished work, in the worst case.⁵² Furthermore, larger service providers have idle equipment and staff that they deploy in case of demand, shifting these assets from one country to another. Local firms depend on a single market. This is particularly problematic because there is uncertainty about the timing and volume of future investment by oil field operators, not at least as a result of general economic and political instability in Argentina.⁵³ Due to financial constraints—reinforced by Argentina's exceptionally high interest rates—local firms can hardly invest in technology that would allow them to offer more than generic services.⁵⁴ This prevents them from venturing into more sophisticated activities that they could export in accordance with the expectations mentioned in the next-to-last paragraph. Most demonstratively, in the province of Neuquén, which is home to the Vaca Muerta field, there are no local firms that carry out drilling.⁵⁵

Table 2 summarises the findings on the interplay of Buenos Aires and its hinterland.

TABLE 2 Gateway functions of Buenos Aires and hinterland locations, and implications for development

Gateway function	Buenos Aires	Hinterland	Implications for development
Logistics and transport	Hub for air and maritime transport	Logistics parks of local relevance	None
Corporate control	Administration, commercial, and technological activities of all firms; public authorities	None	Argentinean lead firms, strategic partners, and specialised suppliers
Service provision	Corporate services on finance and the law	Operational bases for all services related to exploring and extracting oil and gas	Provision of largely generic services by local firms; upskilling; prospects of internationalisation
Knowledge generation	Universities (and their graduates); research institutes	Research facilities in exceptional cases	Specialised services provided by local organisations and Argentinean staff

Source: Author's own draft.

5 | CONCLUSION

This article revisited gateway–hinterland relations, shedding light on the interactions of world cities that serve as gateways with subordinate places. It also uncovered obstacles to peripheral development, including and going beyond the concentration of business activities in gateway cities. Accra and Buenos Aires—the gateway cities to the hinterlands of Argentina and Ghana, respectively—were found to generate certain opportunities for development through integration into global networks. These are, at present, largely limited to generic services. Hence, the reality of peripheral development remains far from expectations raised by overly ambitious politicians and, in the case of Argentina, also local stakeholders. Although filtering mechanisms of Accra and, even more so, Buenos Aires somewhat limit the prospects of peripheral development, other obstacles appear to be more important.

With regard to Ghana, it has been shown that Accra serves as a gateway because corporate control concentrates there. The reason for this is the density of key players, in particular oil majors and public authorities. Logistics and services, meanwhile, are channelled through the town of Takoradi, in close proximity to the offshore oil and gas fields. Ghanaian firms reinforce their capabilities because of their involvement in oil and gas, adapting to higher standards. This may have positive implications for the entire national economy. In exceptional cases, indigenous companies internationalise their business activities. Joint ventures of foreign investors and domestic partners have become mandatory. Local firms involved in oil and gas generate backward linkages, whose magnitude remains beyond the scope of the analysis presented above. However, many indigenous firms are considered too inexperienced and too unprofessional by potential clients. They lack the necessary financial muscle to plug into the sector. In joint ventures, Ghanaians provide local contacts and labour, depending on the capital and technology of foreign shareholders. Ghanaians are, moreover, often unaware of business opportunities and have to cope with inefficient public authorities. For the provision of products needed in the oil and gas sector, indigenous companies are mere intermediaries that distribute foreign-manufactured inputs. Rent-seeking behaviour and the abuse of legislation on local content further hamper peripheral development.

In spite of a very different history of hydrocarbon extraction, Argentina is characterised by intriguing parallels with Ghana. The density of key players and related corporate control turns Buenos

Aires into a gateway city, whereas technical service provision happens in the resource peripheries. In contrast to Accra, Buenos Aires also serves as a logistics gateway and contributes knowledge needed by oil field operators and specialised service providers. Service provision in the resource peripheries allows for a considerable participation of local firms, contributing to their expansion and upskilling. Administration and transport centres as well as industrial and logistics parks in the province of Neuquén further prove the benefits of integration into the world economy. Prospects of internationalisation hint at expected future revenues, whose magnitude cannot be assessed at present. Being subcontracted, local firms are under severe pressure to reduce costs though. Many are too small for more lucrative projects, lacking the financial means to invest in new equipment and technology, which also contradicts hopes of upgrading into more sophisticated tasks and related internationalisation. Dependence on a single market and uncertainty regarding future investments are significant disadvantages vis-à-vis larger competitors from abroad. Further to that, successful local firms are often absorbed by non-local rivals. Job creation in the resource peripheries is highly unstable.

These findings lead to three topics for follow-up studies. First, gateway-city formation in resource peripheries should be assessed. Takoradi apparently plays a gateway role. For downstream activities, which were not addressed in this article, the Argentinean city of Bahía Blanca serves as a hub—much more than Buenos Aires does (Scholvin, 2021). Second, there is need for a shared understanding of what counts as successful peripheral development. As explained above, some researchers focus on the structural transformation of the local economies under consideration. Others, in particular PRISM scholars, concentrate on linkages. Their evaluation of the same empirical findings tends to be very different, creating confusion. Third, similar to the research by Breul et al. (2019) on South-East Asia, this article showed that prospects for Argentina's and Ghana's resource peripheries are largely limited to providing generic services (although this is mostly due to factors other than filtering mechanisms by gateway cities). Legislation on local content appears unsuitable to facilitate the venturing of local firms into more sophisticated activities. It has negative side effects. From a policy perspective, one should, hence, consider whether a sector as intensive in capital and technology as upstream oil and gas is a realistic path towards peripheral development.

CONFLICT OF INTEREST

The author declares that there is no conflict of interests.

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ENDNOTES

- ¹ Given this research interest, the article does not provide a holistic picture of the oil and gas sector in Argentina and Ghana. Important topics such as prostitution in Takoradi related to the oil boom (Obeng-Odoom, 2014a) or conflicts with the Mapuche community in Neuquén (Aguirre, 2017), among others, are not covered. Further to that, while the author finds that oil and gas offers prospects for development, he is not necessarily an advocate of fossil fuels.
- ² This article makes use of terminology from the literature on global production networks and global value chains. It is not, however, meant as a contribution to these important branches of research. The article focusses on the debate that has evolved around gateway/world cities and peripheral development instead. For more information on different forms of upgrading in global value chains, see: Humphrey and Schmitz (2002) as well as Kaplinsky and Morris (2001).
- ³ The corresponding studies have been published in a special issue of *Resources Policy* (volume 37, number 4).
- ⁴ For a general introduction to case-study research, see: Yin (2017).

- ⁵ A Barrel Full is a wiki site. Subscribed members—not all visitors—can add, change, and remove content. This apparently means that quality control depends on the members. It is not guaranteed by a recognised authority, as in the case of the Energy Information Administration. The information obtained from A Barrel Full and used in this article was cross-checked and can, therefore, be considered reliable.
- ⁶ Interviews with a specialised service provider, Accra, 3 October 2017, with oil field operators, Accra, 14 and 20 October 2017, and with a firm that provides supply vessels, Accra, 18 October 2017. All interviewees spoke as individuals, not as representatives of their respective companies and organisations. Information on their professional affiliations is provided nonetheless to better contextualise the corresponding statements.
- ⁷ Interviews with a specialised service provider, Accra, 3 October 2017, and with an oil field operator, Accra, 12 October 2017.
- ⁸ Interview with a generic service provider, Accra, 5 October 2017.
- ⁹ Interview with a consultant, Accra, 18 October 2017.
- ¹⁰ Interviews with two specialised service providers, Accra, 3 and 6 October 2017, and with an oil field operator, Accra, 12 October 2017.
- ¹¹ Interview with a specialised service provider, Takoradi, 9 October 2017.
- ¹² Interview with a specialised service provider, Takoradi, 10 October 2017.
- ¹³ Interview with a freight forwarder, Takoradi, 11 October 2017.
- ¹⁴ Interview with a freight forwarder, Accra, 6 October 2017.
- ¹⁵ Interview with a freight forwarder, Accra, 5 October 2017.
- ¹⁶ Interview with a freight forwarder, Accra, 6 October 2017.
- ¹⁷ Interview with a freight forwarder, Takoradi, 11 October 2017.
- ¹⁸ Interview with a consultant, Accra, 18 October 2017.
- ¹⁹ Interview with an oil field operator, Accra, 12 October 2017.
- ²⁰ Interview with a consultant, Takoradi, 10 October 2017.
- ²¹ Interview with a local waste management firm, Takoradi, 11 October 2017.
- ²² Interview with a specialised service provider, Takoradi, 9 October 2017.
- ²³ Interview with a specialised service provider, Takoradi, 10 October 2017.
- ²⁴ Interview with a specialised service provider, Takoradi, 9 October 2017.
- ²⁵ Interview with a specialised service provider, Takoradi, 11 October 2017.
- ²⁶ The recent election victory of the populist Frente de Todos marks a turning point for Argentina. The expectations related to foreign investment into oil and gas are, however, shared by the outgoing government and its successor.
- ²⁷ Interviews with oil field operators, Buenos Aires, 10 June 2016, 27 April, 5 and 17 May 2017, and with specialised service providers, Buenos Aires, 5 and 17 May 2017. For a more detailed analysis of Buenos Aires as an oil and gas gateway, see: Scholvin (2019b).
- ²⁸ Interviews with oil field operators, Buenos Aires, 27 April, 5 and 10 May 2017, and with specialised service providers, Buenos Aires, 5 May and 4 December 2017.
- ²⁹ Interview with a local engineering firm, Neuquén, 29 November 2017.
- ³⁰ Interviews with oil field operators, Buenos Aires, 5, 16, and 17 May 2017, and with specialised service providers, Buenos Aires, 5 May and 14 December 2017.
- ³¹ Interviews with an oil field operator, Buenos Aires, 5 May 2017, and with a consultant, Buenos Aires, 7 May 2017.
- ³² Interview with an oil field operator, Buenos Aires, 5 May 2017.
- ³³ Interviews with an oil field operator and a specialised service provider, Buenos Aires, 5 May 2017.
- ³⁴ Interviews with specialised service providers, Buenos Aires, 3 and 5 May 2017, and with an oil field operator, Buenos Aires, 5 May 2017.

- ³⁵ Interviews with specialised service providers, Buenos Aires, 3 and 5 May 2017, and with an oil field operator, Buenos Aires, 5 May 2017.
- ³⁶ The twenty-foot equivalent unit (TEU) is a unit of cargo capacity used to describe the capacity of container ships and container terminals. It is based on the volume of a 20-foot-long intermodal container.
- ³⁷ Interviews with oil field operators, Buenos Aires, 27 April and 10 May 2017.
- ³⁸ Interview with a local engineering firm, Neuquén, 29 November 2017.
- ³⁹ Interviews with specialised service providers, Buenos Aires, 9 and 17 May 2017, and with an oil field operator, Neuquén, 28 November 2017.
- ⁴⁰ In practice, there are case-specific negotiations between foreign companies and the provincial governments, as an interviewee explained (Neuquén, 27 November 2017). The provincial governments appear to be rather flexible, using legislation on local content mainly as “a platform for dialogue” (Interview with an organisation that supports SMEs, Neuquén, 30 November 2017). This made executives of a local chamber of commerce claim that legislation on local content “is not fulfilled” (Neuquén, 23 November 2017).
- ⁴¹ Interviews with an oil field operator, Neuquén, 22 November 2017, and with specialised service providers, Buenos Aires and Neuquén, 29 and 30 November and 14 December 2017.
- ⁴² Interviews with specialised service providers, Neuquén, 29 November 2017.
- ⁴³ Interview with a local engineering firm, Neuquén, 29 November 2017.
- ⁴⁴ Interviews with generic service providers, Allen and Neuquén, 28 November 2017.
- ⁴⁵ Interview with a generic service provider, Allen, 28 November 2017.
- ⁴⁶ Interviews with an oil field operator, Neuquén, 22 November 2017, and with a specialised service provider, Neuquén, 29 November 2017.
- ⁴⁷ Interview with a local chamber of commerce, Neuquén, 23 November 2017.
- ⁴⁸ Interviews with the provincial government, Neuquén, 27 November 2017, and with an organisation that supports SMEs, Neuquén, 30 November 2017.
- ⁴⁹ Interview with an oil field operator, Buenos Aires, 17 May 2017.
- ⁵⁰ Interview with a specialised service provider, Buenos Aires, 9 May 2017.
- ⁵¹ Interview with a local chamber of commerce, Neuquén, 23 November 2017.
- ⁵² Interview with an oil field operator, Neuquén, 28 November 2017.
- ⁵³ Interview with a local engineering firm, Neuquén, 29 November 2017.
- ⁵⁴ Interview with the provincial government, Neuquén, 27 November 2017.
- ⁵⁵ Interview with an organisation that supports SMEs, Neuquén, 30 November 2017.

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