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Navigating the Energy Transition in the Gulf Cooperation Council (GCC) States: The Role of Industrial Policies in Fostering Sustainable Economic Competitiveness

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ABSTRACT

The Gulf Cooperation Council (GCC) states have relied on their abundant oil and gas resources, which have shaped their economic and social structures. The comparative advantage of the oil/gas sectors encouraged the development of those sectors, but other sectors (actual or potential) suffered from comparative disadvantage and shrank or did not develop. The potential of industrial strategy in driving the energy transition and promoting sustainable economic competitiveness in the region is explored. Shifting from a rentier state perspective to a more developmental and entrepreneurial approach, this paper examines the range of economic and industrial policies the GCC states could adopt to facilitate the energy transition. The energy transition requires the identification of potential industries and sectors that can provide the GCC states with competitive advantages. The industrial policy framework must prioritize local content development, skill enhancement, and knowledge transfer to ensure a successful transition.

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1. Introduction

For the past half-century, the economies of the Gulf Cooperation Council (GCC) states have been defined by their abundant oil and gas resources. This endowment created a strong comparative advantage in hydrocarbons, which in turn shaped their economic structures, public finances, and social contracts (Herb 2015). However, this reliance has also hindered broader industrial diversification, leaving the region vulnerable to the volatility of global energy markets. As the world transitions towards a low-carbon future, driven by climate change and technological advancements, the urgency for the GCC states to decouple their economies from fossil fuels has intensified, presenting both profound challenges and significant opportunities (IEA 2021b; IMF 2022).

The analytical framework for this paper is built on the transition from a 'rentier state' model to an 'entrepreneurial state' model (Mazzucato 2013). The rentier model,

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characterized by the distribution of hydrocarbon revenues rather than productive economic activity, is no longer sufficient to secure long-term prosperity (Beblawi and Luciani 1987). In its place, we argue that an entrepreneurial state, one that actively shapes markets, takes strategic risks, and co-creates value with the private sector, is necessary to navigate the energy transition. This paper's central thesis is that a comprehensive and coherent industrial strategy is the key mechanism through which the GCC states can manage this shift, moving beyond mere comparative advantage in resources to build durable competitive advantages in new, sustainable industries.

This paper contributes to the literature by proposing a framework of specific policy instruments essential for this transformation. We explore how targeted investments in renewable energy, robust support for research and development (R&D), strategic skill development programs, and fostering a circular economy can collectively drive sustainable economic competitiveness. The paper is structured as follows: Section Two provides the theoretical background on the rentier state and the imperative for state-led development. Section Three contrasts comparative and competitive advantage in the GCC context. Section Four outlines the core components of an industrial strategy for the energy transition, analyzing key sectors for diversification. Section Five discusses the specific policy dimensions, and Section Six concludes.

2. Background

2.1. Rentier State

The economic trajectory of the GCC states has been shaped by their abundant hydrocarbon resources, leading to the emergence of a rentier state model. This model, characterized by a dominant public sector, heavy reliance on resource rents, and a limited private sector, has been a central theme in understanding the region's development (Beblawi and Luciani 1987). There has been a substantial reliance on migrant labour with up to 90 per cent of the work force being migrant labour (non-citizens). The features of these rentier states include the allocation of oil revenues for public spending and social welfare programs, contributing to a culture of dependency and a relatively passive private sector (Hertog 2010).

Beblawi (1987, p. 384) views a rentier economy as one in which rent situations predominate and relies on substantial external rent, which refers to revenue generated from foreign sources without a corresponding domestic productive effort, primarily oil and gas sales in the GCC context. He portrays internal rent in terms of domestic payment transfer in a productive economy. 'An external rent … can, if substantial, sustain the economy without a strong productive sector, hence the epithet of a rentier economy' (Beblawi 1987, p. 385). He stated that 'in a rentier *state*—as a special case of a rentier economy – only few are engaged in the generation of this rent (wealth), the majority being only involved in the distribution or utilization' (Beblawi 1987, p. 385). The government is the principal recipient of the external rent in the economy in a rentier state, and a predominantly rentier state is central to the distribution of that wealth to its citizens. A rentier economy 'creates a specific mentality: a *rentier mentality* (emphasis in original). The basic assumption about the rentier mentality and that which distinguishes it from conventional economic behavior is that it embodies a break in the

work-reward causation. Rewards — income or wealth — is not related to work and risk bearing, rather to chance or situation. For a rentier, reward becomes a windfall gain, an *isolated* fact, a situational or accidental as against the conventional outlook where reward is integrated in a *process* as the end result of a long, systematic and organized production circuit. The contradiction between production and rentier ethics is, thus, glaring.' He continued that in the Arab world (with what he described in 1987 as a decade of the oil era) 'oil rich as well as oil poor, is becoming a sort of oil economy with various undertones of rentier mentalities.'

The concept of 'late rentierism' (Gray 2011) has been introduced to understand the evolving nature of rentier states in the GCC. This concept suggests that while the GCC states continue to rely on hydrocarbon rents, they have also embarked on efforts to diversify their economies, invest in human capital, and promote innovation. This reflects a growing recognition of the need to transition towards a post-oil era and build a more sustainable economic model.

Gray (2018) argues that 'rents are still core to the political economy of the Gulf states and to the methods of rule deployed by Gulf leaderships' But 'late rentierism' has developed where rentierism is married with the concepts of neopatrimonialism and entrepreneurial state capitalism. Neopatrimonialism is defined 'as an interpersonal mechanism wherein a leader creates a web of elites around himself — the ruler is usually a male — and encourages those elites to form their own patron-client networks through which resources and opportunities are fed out by the ruler, and loyalty and information are fed inward' (p. 31). New state capitalism is seen as a 'political economy in which the state is a disproportionate owner of the means of production in an economy, and is highly regulatory and paternalistic towards the private sector, while nonetheless permitting market forces to set prices and usually encouraging state-owned firms to be efficient and profitable. The state has long-term goals and is even 'entrepreneurial' in its ambitions'. 'Rents fund the main features and institutions of state capitalism, with neopatrimonial mechanisms used to manage the diffusion of rents and the reciprocal flow of loyalty and information back to leaders. In turn, neopatrimonialism provides a structure through which elite relationships can be managed by rulers — relationships that would otherwise be poorly addressed, or too bluntly managed if general rentier allocations alone were utilized.' 'Entrepreneurial state capitalism supports rentierism by helping to compensate for its weaknesses and vulnerabilities, and by giving the state more choice and greater sophistication in the way it engages with both its population and the outside world.'

2.2. An Empirical Overview of GCC Economies

The characteristics of a rentier state outlined above are reflected in the economic data of the GCC countries. For decades, the hydrocarbon sector has dominated the region's economic output. For instance, in Saudi Arabia and Qatar, oil and gas revenues have often accounted for over 70 per cent of total government revenues and more than 40 per cent of GDP (World Bank 2023). This has funded a large public sector, which is the primary employer of nationals, creating a 'rentier society' where citizen welfare is closely tied to state-distributed resource wealth rather than private-sector productivity. While diversification efforts have increased the contribution of non-oil sectors in recent years, particularly in services and logistics in the UAE, the hydrocarbon sector remains the primary

engine of economic activity and finance across the region (IMF 2022). This structural imbalance underscores the scale of the challenge in transitioning to a diversified, post-oil economy.

2.2.1. Resource Curse and Dutch Disease

Countries which have an abundance of some natural resources have often been viewed in terms of suffering from a 'resource curse' and 'Dutch disease'. The GCC countries with their abundance of oil and gas resources can be examined in terms of whether they suffer to some degree from a 'resource curse' and the implications for transition to low carbon economies. The 'resource curse' associated with natural resource rents has three dimensions. First, the processes of natural resource extraction use economic resources that could otherwise be allocated to other industries which may be more conducive to industrialisation and development. Second, global prices for natural resources are volatile and destabilize exporting economies. Third, the concentrated nature of many natural resource supplies facilitates rent capture by non-inclusive governments, whose institutions support the retention of political power rather than the promotion of economic growth.

Boschini, Pettersoson, and Roine (2012, p. 30) argue that theoretical and empirical research 'has found that having large shares of natural resource exports in the economy is problematic only if institutional quality is too poor. In countries with sufficiently good institutions resource dependency instead contributes positively to economic growth'. Their results support the view that more autocratic states may be better at turning some resources into growth than are less autocratic (but still autocratic) states.

On the existence of the natural resource curse, a recent survey argued that the 'previous literature has documented a great deal of heterogeneity in the effect of (point-source non-renewable) natural resources on economic growth. We collect 43 studies providing 605 different regression specifications and find that approximately 40% of them report a negative and statistically significant effect, another 40% report no effect, and the remaining 20% report a positive and statistically significant effect of natural resources on economic growth.' (Havranek, Horvath, and Zeynalov 2016, p. 143). They use meta analysis techniques and find that the mean effect of natural resources on economic growth is negligible. They find that there are several factors which are systematically important for the estimated effect of natural resources on economic growth, and that results depend on 'whether primary studies control for the investment level, control for the quality of institutions, include an interaction term between institutional quality and natural resource richness, distinguish between different types of natural resources, and differentiate between resource dependence and resource abundance.' The possible 'resource curse' is broader than possible effects on growth, including corruption, and the context of oil rich countries rentier state.

The abundance of hydrocarbons and their exploitation leads to a relatively high exchange rate and a form of what has become known as 'Dutch disease'. In the original case, the discovery of gas off the coast of the Netherlands led to a rising exchange rate which lowered demand for Netherlands' exports particularly in the manufacturing sector (for example Corden and Neary 1982). In the GCC countries, the high exchange rate has made the development of other industries more difficult. In the GCC, the dominance of the oil and gas sector has also raised concerns about the region's vulnerability to fluctuations in global oil prices and its ability to create a sustainable, diversified economy.

2.2.2. State-Led Development

State-led development theory posits that governments can play a proactive role in guiding economic development through strategic interventions and investments (Wade 1990). In the context of the GCC there have been elements of state-led development along the lines of state capitalism. First, governments have leveraged oil revenues to finance large-scale infrastructure projects, such as ports, airports, and industrial zones, which have been instrumental in attracting foreign investment and facilitating economic activity. Second, state-led investments in education and healthcare have significantly improved human capital, enhancing the region's workforce and productivity (UNDP 2022). Third, state-owned enterprises have played a dominant role in key sectors, contributing to economic growth and employment (Beblawi and Luciani 1987).

However, the state-led development model in the GCC has also faced criticisms. Some argue that it has fostered a culture of dependency on government largesse, hindering the development of a vibrant private sector (Herb 2015). Others have raised concerns about the efficiency and effectiveness of state-led investments, particularly in the absence of strong accountability mechanisms (Hvidt 2013). Additionally, the dominant role of state-owned enterprises has been criticized for crowding out private sector investment and stifling competition (Al-Sabah 2018). The implications of state-led development for the GCC's future are significant. As the region seeks to diversify its economy and transition towards a post-oil era, the role of the state will need to be redefined. While the state will continue to play an important role in providing public goods and investing in strategic sectors, there is a growing recognition of the need to create a more conducive environment for private sector growth and innovation (World Bank 2020). This will require reducing the dominance of state-owned enterprises, promoting competition, and fostering a culture of entrepreneurship.

State interventions and involvements in a market economy take a range of forms, some of which foster development and some of which hinder. Dore (1986) makes a four way distinction in the classification state interventions in the economy. The first is the 'regulation of individual transactions to make markets work where *caveat emptor* alone is not a feasible principle– preventing fraud, adulteration, short weights, providing the legal framework for enforcing contracts, etc.' The second is competition policy and anti-monopoly and restrictive practices. The third concerns intervention to promote growth divided into (i) those actions which can be labelled domestic developmentalism and promoting a general interest where external, social benefits greatly exceed internal, private benefits, and (ii) actions, which can be labelled 'competitive developmentalism' explicitly to promote the competitiveness of the nation including infant industry protection, export subsidies, various forms of mercantalism. The fourth is 'Pork barrel' intervention that is the use of state power to promote particular sectional interests for corrupt personal or electoral advantage. It is helpful to keep these (and similar) distinctions in mind when considering (as below) industrial policies and strategies.

Juhász, Lane, and Rodrik (2023) 'define industrial policies as those government policies that explicitly target the transformation of the structure of economic activity in pursuit of some public goal. The goal is typically to stimulate innovation, productivity, and economic growth. But it could also be to promote climate transition, good jobs, lagging regions, exports, or import substitution. Since industrial policy targets structural

change, a key characteristic is the exercise of choice and discretion by the public authorities: 'we promote *X* but not *Y*,' though the later part of this statement is typically left implicit.'. This concept of industrial policy comes close to what we (and others) term industrial strategy, though we extend coverage to include education and skills policies etc.. Industrial policy/strategy clearly goes beyond manufacturing industry. Industrial policies overlap with regional policies and innovation policies.

The strategic involvement of the State in economic and social development and in economic transition (e.g., from agriculture to manufacturing) can be viewed through the lens of the 'developmental state' (Amsden 1989; Haggard 2018), and the 'entrepreneurial state' (Mazzucato 2013). It can be viewed through the lens of an industrial strategy (or some may think in terms of industrial policy, though we would see industrial strategy as more widely ranging than industrial policy).

The ideas on an entrepreneurial state draw heavily on the work of Mazzucato's concept of state entrepreneurship. This challenges the conventional view of the state as a passive facilitator of markets, instead highlighting its active role in driving innovation and economic transformation. In 'The Entrepreneurial State', Mazzucato (2013) argues that the state has often been the risk-taker behind major technological breakthroughs, from the internet to pharmaceuticals, by investing in high-risk, high-reward projects that the private sector is often unwilling to undertake. 'The developmental role of the State involves the active promotion of industrial development under which the State adopts an entrepreneurial role, either in its own industrial operations and/or in its promotion of private business. The regulatory role relates to the interventions by the State in industrial affairs through regulation, e.g., of prices, some control over monopoly power. In effect through the regulatory role, the State impinges on many economic actors by restriction, whereas through a successful developmental role, the State creates opportunities which would not otherwise exist' (Sawyer 1992).

State led entrepreneurship denotes the active role of state in supporting the entrepreneurship creation by taking measures that are not limited to policy making. Economic theories like developmental state theory and Schumpeterian theory explain the entrepreneurial state concept, and its role in the sustainable economic development. The Schumpeterian theory postulates that the entrepreneurship acts as economic growth engine. At state level, the entrepreneurial role encourages the state to extend its role from a mere passive regulator to a proactive enabler of entrepreneurial activities (Batabyal and Nijkamp 2012).

An entrepreneurial state not only introduces the supportive policies by acting as a regulator, but cultivates a broader eco-system that supports entrepreneurship by investing on infrastructure and research and development (Demirbas and Demirbas 2011). Entrepreneurial states create the broader institutional and legal frameworks that encourage the risk taking, and incentivize the innovation. The availability of supportive mechanisms at state level encourages an entrepreneurial culture in the economy, paving path for a well-diversified and resilient economy (Batabyal and Nijkamp 2012). In the GCC context, the state led entrepreneurship signifies the active role that governments play in encouraging the entrepreneurial endeavors beyond the policy making. This active role aims at transforming the government into a proactive entrepreneurship enabler by investing on innovation, research, and infrastructure, cultivating a dynamic entrepreneurial ecosystem (Saberi and Hamdan 2019).

In the GCC context, state entrepreneurship would stand in some contrast to the rentier state model. As the region grapples with the imperative of economic diversification and the transition away from fossil fuels, the state can leverage its financial resources and institutional capacity to foster innovation and drive the development of new industries (Mazzucato 2013). This can be achieved through targeted investments in research and development, creating public-private partnerships, and supporting the growth of strategic sectors such as renewable energy, technology, and advanced manufacturing. Recent examples of state entrepreneurship in the GCC include Saudi Arabia's Public Investment Fund (PIF), which has made significant investments in technology companies like Uber and SoftBank's Vision Fund. The UAE's Mubadala Investment Company has also pursued a similar strategy, investing in a diverse range of sectors including renewable energy, aerospace, and healthcare. These initiatives demonstrate a growing recognition of the state's potential as a catalyst for economic transformation in the region. A prime contemporary example is the UAE's Technology Innovation Institute (TII) and its applied research pillar, ASPIRE, which actively works to bridge the gap between advanced research and industry needs in areas like AI, quantum computing, and autonomous systems. This institution embodies the entrepreneurial state's role in building a national R&D ecosystem from the top down.

The successful implementation of an entrepreneurial state perspective in the GCC would require fundamental shifts in mindset among policymakers, major changes in institutional arrangements and in the relationships between State and society. It would also require a willingness to embrace risk and experimentation. It also necessitates building institutional capacity and developing a skilled workforce capable of driving innovation (Al-Mulla 2021). Moreover, ensuring transparency and accountability in state-led investments is crucial to mitigate the risks of corruption and rent-seeking behavior.

3. Comparative Advantage vs. Competitive Advantage in the GCC

In the realm of international economics, comparative advantage and competitive advantage are two fundamental concepts that shed light on the economic strengths and strategies of nations and firms. While both concepts relate to a country's or firm's ability to outperform others in specific areas, they differ in their underlying principles and implications.

Comparative advantage refers to a country's ability to produce a good or service at a lower opportunity cost than another country. The opportunity cost represents the value of the next best alternative forgone when choosing to produce a particular good.

In the context of the GCC, their comparative advantage has historically been tied to their abundant oil and gas reserves. These resources have enabled the region to produce and export hydrocarbons at a lower opportunity cost than many other countries, contributing to their economic prosperity. However, this reliance on a single commodity has also exposed them to vulnerabilities due to fluctuations in global oil prices.

Competitive advantage refers to a firm's or country's ability to offer products or services that are either superior in quality, have unique features, or are more cost-effective than those offered by competitors (Porter 1985). This advantage allows them to gain a larger market share and achieve higher profitability. Competitive advantage can be

achieved through various means, including technological innovation, superior management practices, strong branding, or access to unique resources.

For the GCC economies, the pursuit of competitive advantage has become increasingly important as they seek to diversify their economies beyond oil and gas. This diversification strategy involves investing in new sectors such as tourism, finance, logistics, and renewable energy, leveraging their strategic location, skilled workforce, and financial resources (IMF 2022).

In a sense the comparative advantage of GCC in hydrocarbon would remain — in so far as the conditions of production do not change (as hydrocarbon begin to run out and costs of extraction rise then comparative advantage diminishes). However, it is assumed that the global demand for hydrocarbon will decline (or at least grow more slowly), and the world price of hydrocarbon and/or revenue (in dollars) from hydrocarbon decline.

Historically, the GCC's comparative advantage in oil and gas has been the primary driver of their economic growth. However, with the global shift towards renewable energy sources and increasing environmental concerns, the long-term sustainability of this model is in severe doubt. This transition from comparative to competitive advantage presents a significant challenge for the GCC. It requires a fundamental shift in economic structure, a focus on innovation and human capital development, and a willingness to embrace competition and risk-taking. Moreover, it necessitates overcoming institutional constraints, improving governance, and fostering a culture of entrepreneurship (Al-Mulla 2021). Successful examples of GCC countries developing competitive advantages can be seen in Dubai's emergence as a global hub for tourism and trade, and Saudi Arabia's ambitious plans to become a leader in renewable energy and technological innovation (Nehme 2023). These initiatives demonstrate the region's potential to create new sources of competitive advantage and reduce its reliance on oil.

Understanding the distinction between comparative and competitive advantage is crucial for the GCC economies as they navigate the complexities of economic diversification. While comparative advantage has historically been their strength, the future lies in developing competitive advantages in new sectors that can drive sustainable growth and prosperity for the region. The evolving dynamics of rentier states, the increasing emphasis on state entrepreneurship, and the growing interest in transitioning towards a knowledge-based economy highlight the complex and multifaceted nature of the GCC's economic trajectory (World Bank 2018). Understanding these theoretical frameworks is crucial for policymakers and researchers to design effective strategies for sustainable development and navigate the challenges of a post-oil future.

4. Industrial Strategy for Energy Transition

The imperative to diversify is not lost on GCC policymakers. The region's leading economies have already launched ambitious national development plans aimed at reducing hydrocarbon dependency. Saudi Arabia's Vision 2030 is a comprehensive blueprint for economic and social reform, with pillars focused on developing sectors like tourism, entertainment, technology, and mining. Similarly, the Abu Dhabi Economic Vision 2030 prioritizes the development of a sustainable, knowledge-based economy. These strategies provide the official state-led framework within which any effective industrial policy must operate. Our analysis, therefore, seeks to identify and strengthen the industrial policy

levers that can help these visions succeed. In order to enable a transition to a low carbon and environmentally sustainable economy and society, an industrial strategic approach is required. A structural transformation requires appropriate funding as investment and economic activity shift between sectors. The major component of an industrial strategy approach to map out the broad contours of the development path of the economy (Sawyer 2021). This general perspective can be applied to the case of the GCC countries taking into account the particular challenges and opportunities which they face.

Sawyer (2000) wrote that an industrial strategy approach 'does not lead to the advocacy of central planning: in part because of the informational and incentive requirements for successful planning are impossible to achieve. Instead, the government accepts a strategic role under which a broad view on future developments is evolved and in which public support is forthcoming for productive activities (rather than exchange or financial ones). Much of the co-ordination of economic activity is undertaken through the market, though it is recognized that substantial parts of such coordination take place within firms and within households.' The industrial strategy approach does not see a sharp dichotomy to be drawn between allocation through markets and allocation through planning. In the present context, the particularly significant element of what may be termed a climate emergency industrial strategy is that the re-structuring of the economy in an environmentally sustainable direction becomes the centre piece. This requires, *inter alia*, mapping out the shifts in the structures of economic activity which would be required, the identification of the types of investment which are consistent with addressing the climate emergency and environmental degradation (and which may be labelled 'green investments') etc. An important feature of a climate emergency industrial strategy would be setting out what is regarded as 'green', and what is not, and the degrees of 'greenness' (Sawyer 2021).

The energy transitions in oil-dependent economies encounter daunting challenges and promising opportunities. The challenges are multifaceted, stemming from economic, social, and political factors. Economic vulnerabilities are paramount, as these economies are heavily reliant on volatile oil revenues (Al-Sabah 2018). The global shift towards renewable energy and decarbonization exacerbates the vulnerabilities of economies heavily dependent on oil and gas revenues. The concerns about the long-term sustainability of oil-dependent economies (IEA 2021b) necessitates economic restructuring and diversification away from fossil fuels, a complex and often politically challenging process. Social challenges arise from the potential for job losses and social unrest during the transition, particularly in economies with large public sectors supported by oil revenues (IMF 2024). Moreover, transitioning to a low-carbon economy requires significant investments in infrastructure and technology, posing financial constraints for many oil-dependent countries (World Bank 2020). Political challenges include vested interests in the oil and gas sector, resistance to change, and the need for strong governance and policy frameworks to manage the transition effectively.

The energy transition also presents significant opportunities for oil-dependent economies. Investing in renewable energy infrastructure, energy efficiency, and green technologies can create new sources of economic growth, employment, and export potential (IRENA 2023). Moreover, the transition can spur innovation and technological advancements, positioning these economies for a sustainable future and potentially establishing them as leaders in new energy technologies. The existing infrastructure and expertise in

the oil and gas sector can be leveraged for renewable energy projects, reducing transition costs and creating a smoother pathway towards a low-carbon economy (IEA 2021a). Additionally, diversifying into other sectors such as tourism, manufacturing, and services can reduce dependence on oil revenues and enhance economic resilience.

Successful energy transitions in oil-dependent economies require comprehensive policy frameworks that incentivize investment in renewable energy, promote energy efficiency, and support research and development. International cooperation and knowledge sharing are also crucial for accessing the necessary technology and expertise and learning from successful transitions in other countries. The literature emphasizes the importance of a holistic approach that considers economic, social, and environmental dimensions, ensuring a just and equitable transition for all stakeholders.

The recognition that GCC economies need to shift their production structures away from hydrocarbons (whether for reasons of the coming depletion of those resources or for environmental sustainability reasons) raises the immediate question where to diversify to? The development of many sectors of the GCC economies can be seen to be held back by the dominance of hydrocarbon sectors and the impacts on the exchange rate (in effect the 'Dutch disease').

An industrial strategy in practice would need to identify those sectors (potential or actual) which could possess comparative advantage as hydrocarbon declines and/or which could develop competitive advantage. Two recent examples of thinking along these lines can be given, though in each case they are at the consultation discussion stage rather than policy implementation stage. The title of Department for Business and Trade (2024) is 'Invest 2035 :the UK's modern industrial strategy'. 'Industrial strategy will channel support to 8 growth -driving sectors—those in which the UK excels today and will propel us tomorrow. They include the services and manufacturing industries that present the greatest opportunity for output and productivity growth over the long-term.' The sectors identified are: Advanced manufacturing; Clean energy industries; Creative industries; Defence; Digital and technologies; Financial services; Life sciences; Professional and business services.

The report to the Draghi (2024a) identifies 'the root causes of the EU's weakening position in key strategic sectors and lay out a series of proposals to restore the EU's competitive strength.' The stated objective of the report 'is to lay out a new industrial strategy for Europe to overcome these barriers.' Draghi (2024b) lists eight sectors on which the industrial strategy should focus, namely energy; Critical raw materials; digitalisation and advanced technologies with sub-sectors of high-speed/capacity broadband networks; computing and AI; semiconductors; energy-intensive industries; clean technologies; automotive; defence; space; pharma; transport. A series of what are termed horizontal policies are then listed.

In a similar vein, an industrial strategy for the GCC countries (whether on an individual or collective basis) would need the identification of some sectors for future development and support. We make some very provisional suggestions on what those sectors could be. These sectors include trade, tourism, technological innovation, and financial services, among others. Each sector presents opportunities and challenges that can help the GCC countries diversify their economies and reduce their dependence on oil revenues.

4.1. Tourism Industry

The tourism sector is identified as a promising area for economic diversification in the GCC. The region's unique cultural and natural attractions, coupled with strategic investments in infrastructure, position it well to capitalize on global tourism trends (Mansfeld and Winckler 2007). Dubai serves as a prime example of successful tourism development, showcasing the potential economic benefits and the challenges, such as dependency on foreign labor, that come with expanding this sector (Mansfeld and Winckler 2007).

The tourism and hospitality sector in the GCC is increasingly focusing on sustainability to gain a competitive edge. Digital leadership and eco-innovation are crucial in enhancing sustainable competitive advantage in this sector (Hussein et al. 2024). Green Human Resource Management (GHRM) and eco-innovation are pivotal in driving green competitive advantage in the tourism industry. These practices not only improve environmental performance but also enhance the sector's market competitiveness (Alshehri et al. 2024).

4.2. Technological Innovation and Knowledge Economy

Technological innovation is a sector where the GCC can gain a competitive edge. The region has seen incremental growth in its technological capabilities, with Saudi Arabia leading in innovation efforts (Tseng 2014). Collaboration with advanced countries like the USA, France, and Germany has been crucial in enhancing the GCC's technological innovation capabilities, highlighting the importance of international partnerships (Tseng 2014).

4.3. Financial Services and Sovereign Wealth Funds

The GCC countries are significant players in global financial markets, primarily through their sovereign wealth funds (SWFs). These funds provide a platform for strategic investments that can enhance the GCC's global economic influence (Sturm et al. 2008). The development of a robust financial sector, including deepening debt markets and improving corporate governance, is essential for sustaining economic growth and competitiveness (Ramady 2012). Empirical research supports this view. Studies have shown that while oil-rich economies can be resilient to global financial shocks due to their large sovereign wealth funds (Mirzaei and Al-Khouri 2016), the development of a sophisticated domestic financial sector is critical for channeling oil wealth into non-oil economic growth and avoiding the pitfalls of the resource curse (Samargandi, Fidrmuc, and Ghosh 2014). Furthermore, the ecological impact of continued oil exploration necessitates a pivot in investment strategy towards green finance to ensure long-term sustainability (Samargandi 2021).

4.4. Intellectual Capital and Knowledge-Based Investments

The emphasis on intellectual capital (IC) and knowledge-based investments is crucial for the GCC's transition to a knowledge economy. This shift is supported by reforms in corporate governance and ownership structures, which are vital for fostering innovation and

competitiveness (Al-Sartawi 2018). While these sectors offer promising avenues for economic diversification and competitive advantage, the GCC countries face challenges such as labor market reforms, dependency on foreign labor, and the need for improved competitiveness in the private sector (Callen et al. 2014; Mansfeld and Winckler 2007). Addressing these challenges will be critical for the GCC to fully realize the potential of these sectors and achieve sustainable economic growth.

4.5. Green Hydrogen

The GCC countries are well-positioned to become leaders in the hydrogen economy due to their natural resources and strategic investments. The transition to a hydrogen economy is driven by the need to meet ambitious carbon emission targets, such as Saudi Arabia and Bahrain's net-zero emissions by 2060 (Khan and Al-Ghamdi 2023). Despite challenges like high production costs and infrastructure needs, the long-term prospects for green hydrogen are promising. The expected reduction in production costs by 2030 could make green hydrogen a viable alternative to fossil fuels, providing a significant competitive advantage for the GCC (Khan and Al-Ghamdi 2023).

4.6. Advanced Manufacturing

The manufacturing sector in the GCC is exploring green innovation and entrepreneurship to redefine competitive advantage. By integrating green absorptive capacity and eco-innovation, manufacturing firms can enhance their competitiveness and sustainability. The development of the non-oil export sector, supported by robust macroeconomic conditions and infrastructure, is crucial for the diversification of the GCC economies. This sectoral development is essential for sustainable economic growth and competitive advantage (Fadol and Alquayt 2024).

4.7. Digital Innovation and Intellectual Capital

The integration of artificial intelligence (AI) and intellectual capital in business strategies is vital for enhancing competitiveness in the GCC. Government intervention and R and D investments play a significant role in fostering innovation and competitiveness (Abdel-Fattah et al. 2024).

Digital leadership in tourism and hospitality businesses, supported by green absorptive capability and eco-innovation, is essential for achieving sustainable competitive advantage. This approach aligns with the dynamic capabilities theory, emphasizing the importance of digital strategies and environmental initiatives (Hussein et al. 2024).

4.8. Solar Energy

The GCC region is well-positioned to harness solar energy due to its high solar insolation levels. This sector is gaining traction as part of the broader strategy to integrate renewable energy into the energy mix (Farag and Bansal 2022). Despite challenges such as oil

dependence and climatic conditions, the potential benefits of solar energy, including scalability and ease of installation, make it a promising area for investment (Farag and Bansal 2022).

4.9. Microchips and Technology

The development of a technology-based private sector is essential for the GCC's economic diversification. This includes the microchip industry, which can benefit from investments in innovation and technology transfer (Akkas and Altiparmak 2023). The knowledge economy, supported by strong institutional frameworks and macroeconomic stability, provides a foundation for technological advancements and the growth of the microchip sector (Madbouly, Reyad, and Chinnasamy 2021). This strategic push is evidenced by major international agreements, such as those signed with U.S. technology firms during the Trump administration, to establish advanced data centers and AI infrastructure in Saudi Arabia and the UAE. These deals signal a clear intent to become key players in the global digital economy.

While the GCC economies are making strides in these sectors, challenges remain. The transition to a green economy, for instance, requires overcoming significant obstacles such as high costs and infrastructure gaps. Additionally, the success of these sectors depends on global market dynamics and external factors beyond the control of the GCC countries. Nonetheless, by strategically investing in these sectors, the GCC can achieve sustainable economic growth and a competitive advantage in the global market (Figure 1).

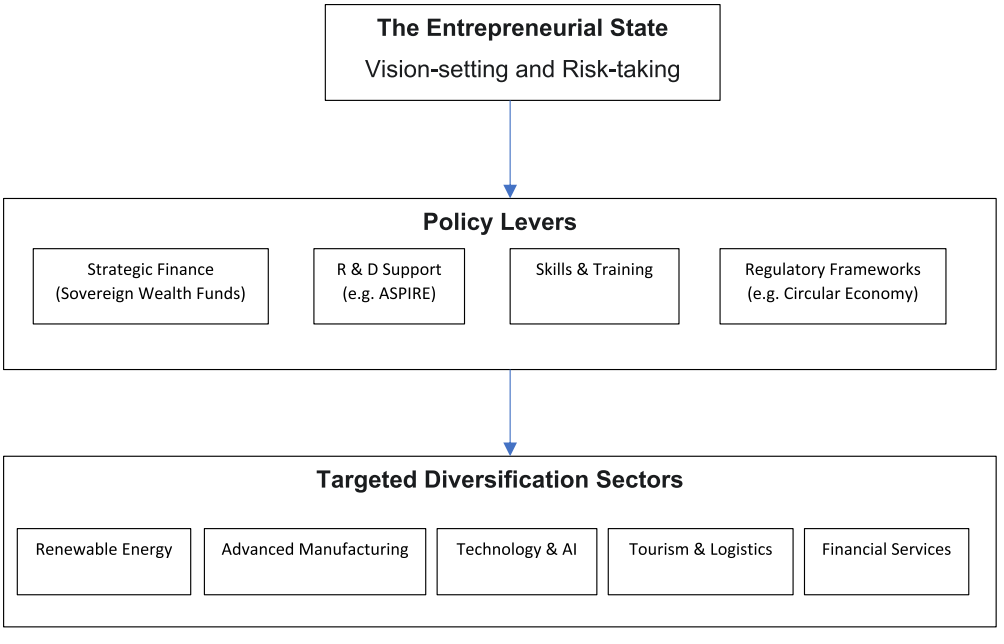

Figure 1. A framework for an entrepreneurial state-led industrial strategy in the GCC. Source: authors' own work.

5. The Policy Dimensions

The over-arching perspective is an environmentally sustainable industrial strategy which involves transition from oil and gas dependent economies to a sustainable alternative. There is potentially a wide range of policy regimes which could support such a transition, and the appropriate structure of policies would depend, inter alia, on the nature of the imagined transition and on the present policy frameworks. The industrial strategy approach would require the re-allocation of resources away from oil/gas dependent sectors towards the alternative sectors. The alternative sectors may not exist or be in the early stages of development. One consequence of being oil/gas dependent is the non-development of other sectors. As Ilyina, Pazarabasioglu, and Ruta (2024) argue the 'Industrial policy steer a reallocation of resources towards certain domestic firms, industries or activities that market forces fail to promote in a socially efficient way'. However industrial strategy is broader than that as will be illustrated below. Ilyina, Pazarabasioglu, and Ruta (2024) continue by saying that there 'There is also some evidence [not cited] that industrial policy can be captured by special interests' (Ilyina, Pazarabasioglu, and Ruta 2024). The quote from Dore cited above reveals the wide range of industrial style policies which can be pursued by government, some of which are ineffectual. In a broader setting, Mazzucato and Li (2020) argue that

> situations where 'rent-seeking' behaviour in the business community leads to government being captured by vested interests … . Rents arise when value is extracted through special privileges and when a company or individual grabs a large share of wealth that would have been produced without their input. The idea is that profit-maximising firms are likely to try to increase their profits through special policy-related favours and this often leads to success on their part, because politicians and policymakers are seen as naturally prone to corruption. Rent-seeking could arise from specific companies, or sectors, seeking extra funding from government through either a subsidy or a tax credit of some sort. (Mazzucato and Li 2020)

5.1. Funding Investment in Public and Private Sectors

The transition to a sustainable economy may not overall require a higher rate of investment — in so far as the rate of investment is closely related to the rate of growth (of GDP) which would be the case where there is a close relationship between capital stock and output (capital-output ratio). However, the transition to low carbon economy likely to have two strong features. First, there will be elements of 'stranded assets', that is assets in industries and sectors where demand is falling and formerly valuable assets lose much of their value. Second, and related, are the requirements for the re-structuring of the capital stock and shifts away from the oil/gas sectors.

5.2. Skills and Training

The skill requirements in a post-oil/gas economy are likely to be rather different from those currently deployed in a oil/gas economy. The structure of production changes under such a transition and the requisite skills may well change. An industrial strategy would need to be accompanied by a programme of skilling and training. It has long been well-known that private companies tend to under-provided training – on the argument that the provision of training is costly and the benefits of training lie with the

recipient of training though some may accrue to the firm undertaken the training. These remarks point to the need to active engagement of the public sector in skills and training as well as seeking to match the skills with those required within an industrial strategy

5.3. Research, Development and Knowledge Transfer

IMF (2024) list (their Table 2.1) six possible rationales for directing innovation: green innovation, labour market effects, spill-over to other sectors, defence/self-sufficiency, international competitiveness and local spillovers. IMF (2024) list R and D fiscal measures to include tax incentives, grants, public R and D and 'patent' boxes (intellectual property regimes, which offer preferential tax treatment to income from protected intellectual property assets (for example, patents, trademarks, or copyrights), tend to reward more established and less financially constrained firms).

Structural and competition policies should strike a balance between lowering barriers to entry for new innovative firms and maintaining robust competition, especially amid rising corporate market power and concentration (Akcigit, Alp, and Peters 2021), while securing the intellectual property rights of successful innovators.

5.4. Labour Force Issues Including Migrant Labour

The GCC economies are heavily dependent on migrant labour, which is generally employed on time-limited contracts, length to some degree depending on skill level and sector. A transition to an economy less oil-dependent would require a significantly re-structured workforce with different skill sets etc. To reform the labour market in the GCC economies and build a competitive industrial policy, a multifaceted approach is required. This involves addressing labor market distortions, enhancing workforce participation, and aligning economic incentives to foster a diversified and competitive industrial sector. The following sections outline key strategies and insights derived from the provided research papers.

5.4.1. Addressing Labor Market Distortions

Migrant Workers' Rights: Migrant workers in the GCC face legal and practical barriers to social protection, exacerbated by the design of the migration system and reliance on employer-sponsored provisions. Reforms are needed to develop comprehensive legal provisions aligned with international standards, address power imbalances, and improve access to social protection for all workers (Lowe et al. 2023). For instance, providing expatriates with secure long-term contracts and allowing them to settle with their close families will provide them with stability that allow them to make long-term development plans and encourage investments in the GCC economies.

Public Sector Employment: The public sector in the GCC is characterized by high pay and job security, which discourages nationals from seeking private sector employment. Reforming public sector employment to align pay with productivity and introducing meritocratic systems can increase competition and productivity among public sector employees (Alaref et al. 2018).

Workforce Localization: Current localization policies often focus on increasing national employment but need to shift towards correcting demographic imbalances and promoting sustainable economic growth. This involves creating complementary economic programs that integrate both nationals and expatriates effectively (Hasan 2015).

5.4.2. Enhancing Workforce Participation

Female Labor Force Participation: Structural reforms and shifting social norms have significantly increased female labor force participation in the GCC, particularly in Saudi Arabia. Removing legal barriers, implementing sound structural reforms, and effective government communication have been key to this success. These strategies can serve as a model for other GCC countries to enhance female workforce participation (Gulf Economic Update, Fall 2024).

Youth Employment: The rapid population growth in the GCC has led to high unemployment rates among the youth, posing socio-political challenges. Addressing this requires targeted labor policies that focus on integrating young nationals into the workforce and providing them with the necessary skills and opportunities (Hussain 2020).

5.4.3. Aligning Economic Incentives

Economic Diversification: The GCC economies are heavily reliant on oil, making them vulnerable to global market volatility. Economic diversification is essential to create jobs in the private sector and ensure sustainable growth. This requires realigning incentives for firms and workers, such as limiting government spending, strengthening private sector competition, and providing support for export-oriented firms (Callen et al. 2014).

Labour Policies: labor policies that link pay to productivity and encourage professional management can enhance foreign direct investment (FDI) flows to the GCC. FDI is crucial for income diversification and building a competitive industrial sector (Mina, 2018)

5.4.4. Broader Perspectives

While the focus on labor market reforms and economic diversification is crucial, it is important to consider the broader socio-economic context. The GCC's reliance on expatriate labor and the provision of subsidized services to expatriates pose additional challenges. Balancing the needs of nationals and expatriates, while ensuring sustainable economic growth, requires careful policy planning and implementation (Hussain 2020). Additionally, the ongoing geopolitical tensions in the Middle East and global economic uncertainties could impact the GCC's economic outlook, necessitating adaptive and resilient policy frameworks (Gulf Economic Update, Fall 2023:, 2024).

In conclusion, reforming the labour market in the GCC to build a competitive industrial policy involves addressing legal and cultural barriers, enhancing workforce participation, and aligning economic incentives. These efforts must be complemented by broader socio-economic considerations to ensure sustainable and inclusive growth.

5.5. Foreign Direct Investment

To attract Foreign Direct Investment (FDI) and promote competitive industries and a sustainable economy, GCC countries need to focus on economic diversification, institutional quality, and strategic policy reforms. These efforts are crucial for reducing dependency on oil and gas sectors and fostering a resilient economic environment. The following sections outline key strategies and considerations for GCC economies to enhance FDI inflows.

Non-Oil Sector Development: GCC countries should prioritize investment in non-oil sectors such as manufacturing, tourism, and finance. This shift is essential to mitigate the negative impact of oil price volatility on FDI inflows (Mohammed 2023). By expanding these sectors, GCC economies can attract FDI that brings advanced technology and creates job opportunities, thus enhancing economic resilience (Alharthi et al. 2024).

Integration and Stability: Regional integration among GCC countries can support trade creation and sustainable growth, which are vital for economic diversification. A stable political and economic environment is crucial for attracting and retaining foreign investors (Khalifa and Ibrahim 2020).

5.5.1. Institutional Quality and Policy Reforms

Improving Institutional Quality: Enhancing government effectiveness, controlling corruption, and ensuring political stability are significant factors that influence FDI inflows. GCC countries need to focus on improving these institutional characteristics to create a conducive business environment for foreign investors (Cieślik and Sarhad 2023).

Policy Incentives: Implementing policies such as tax waivers, relaxed foreign ownership restrictions, and removal of trade barriers can make GCC countries more attractive to foreign investors. These incentives can help overcome the challenges posed by lower institutional quality relative to other regions (Cieślik and Sarhad 2023).

5.5.2. Infrastructure and Urbanization

Infrastructure Development: Continued investment in infrastructure and urbanization is essential for attracting FDI. These developments not only support economic growth but also improve the living standards of the local population, making the region more appealing to foreign investors (Alharthi et al. 2024).

Sustainable Energy Initiatives: GCC countries have opportunities to develop renewable energy sources and decarbonize their oil production. These initiatives can attract FDI by aligning with global sustainability trends and reducing the environmental impact of economic activities (Luciani 2021).

5.5.3. Financial Sector and SMEs

Banking Sector Dynamics: FDI inflows can impact the banking sector by increasing liquidity and competition. GCC countries should monitor these effects to ensure financial stability and maximize the benefits of FDI on national productivity (Saif-Alyousfi 2021).

Support for SMEs: Small and Medium-Sized Enterprises (SMEs) play a crucial role in job creation and economic growth. Supporting SMEs through policy measures can

enhance their contribution to GDP and attract FDI in sectors that are labor-intensive and agile (Al Qahtani and Sankar 2024).

While these strategies are essential for attracting FDI, it is important to recognize the challenges that GCC countries face in their diversification efforts. The transition to a knowledge-based economy requires overcoming functional, structural, and cultural barriers. Additionally, the impact of global economic shifts, such as the COVID-19 pandemic, has highlighted the need for GCC countries to accelerate their diversification initiatives and build a sustainable economic foundation (Ben Hassen 2022).

5.6. Circular Economy

The circular economy model presents a compelling framework for sustainable industrial development in the GCC, offering a departure from the traditional linear 'take-make-dispose' model prevalent in many economies. This concept, as defined by the Ellen MacArthur Foundation (2013), emphasizes minimizing waste and pollution by maximizing the lifespan of products and materials through strategies such as reuse, repair, refurbishment, and recycling.

The GCC, with its resource-intensive industries and growing waste generation, stands to gain significantly from adopting circular economy principles. By prioritizing resource efficiency, the region can reduce its dependence on finite resources like water and raw materials, which are essential for industrial production (World Bank 2020). Furthermore, a circular economy can mitigate environmental impacts, such as pollution and landfill usage, which are pressing concerns due to rapid industrialization and urbanization (Ghisellini, Cialani, and Ulgiati 2016).

The economic benefits of a circular economy are also substantial. It can unlock new economic opportunities and job creation in sectors related to recycling, remanufacturing, and product life extension. By reusing and repurposing materials, businesses can reduce production costs and create more resilient supply chains. Additionally, a circular economy can enhance the region's competitiveness by promoting innovation in sustainable technologies and processes (Morseletto 2020). The GCC has recognized the potential of the circular economy and initiated several policy measures and projects aimed at its implementation. The UAE, for example, has launched the UAE Circular Economy Policy (2021), a comprehensive roadmap that outlines strategies for promoting sustainable consumption and production, developing recycling infrastructure, and supporting research and innovation in circular economy technologies. Other GCC countries have also taken steps to promote waste reduction, recycling, and resource recovery.

However, transitioning to a circular economy in the GCC faces several challenges. These include changing consumer behavior towards more sustainable consumption patterns, developing the necessary infrastructure for recycling and remanufacturing, and creating regulatory frameworks that incentivize circular practices. Additionally, greater collaboration between governments, businesses, and civil society is crucial for ensuring the successful implementation of circular economy principles.

Despite these challenges, the circular economy represents a paradigm shift with the potential to transform the GCC's industrial landscape. By embracing this model, the region can achieve a more sustainable, resilient, and prosperous future while contributing to global efforts to combat climate change and resource depletion. The transition to a

circular economy is not only an environmental imperative but also an economic opportunity that can drive innovation, job creation, and long-term competitiveness.

6. Concluding Comments

The GCC economies and societies have been dominated for five decades and more by their oil and gas reserves. The industrial and trade structures have been moulded by that natural resource abundance, and their growth and development processes closely linked with natural resources. The societies have many elements of rentierism, and a powerful State sector. The climate emergency and the global need to shift to a low carbon economy has obvious implications for the GCC countries and their need to make a transition to economies diversified away from reliance on oil and gas. Major obstacles and impediments to such a transition. There are the shackles of 'Dutch disease' effects which has stunted the growth of non-oil dependent industries, and which now have to be developed. A rentier society with its dependence on oil/gas revenues and the social consequences is not a conducive starting point for the scale of transition which will be required. In this paper we have pointed to a comprehensive environmental strategy conducted by an entrepreneurial state as a route through which a transition could be achieved. But it has to be recognized that shifting from a rentier state to an entrepreneurial state is not a straightforward matter.

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References

Abdelfattah, F., M. Salah, K. Dahleez, R. Darwazeh, and H. Al Halbusi. 2024. 'The Future of Competitive Advantage in Oman: Integrating Green Product Innovation, AI, and Intellectual Capital in Business Strategies.' *International Journal of Innovation Studies*. 8 (2): 154–171.

Abu Dhabi Economic Vision 2030. https://www.actvet.gov.ae/en/Media/Lists/ELibraryLD/economic-vision-2030-full-versionEn.pdf.

Akcigit, U., H. Alp, and M. Peters. 2021. 'Lack of Selection and Limits to Delegation: Firm Dynamics in Developing Countries.' *American Economic Review* 111 (1): 231–275.

Akkas, E., & Altiparmak, S. O. (2023). 'Innovation, Technology Transfer, and Endogenous Growth in the GCC Countries. In *Social Change in the Gulf Region: Multidisciplinary Perspectives*, 397–413. Singapore: Springer Nature Singapore.

Al Qahtani, H., and J. P. Sankar. 2024. 'Impact of Socio-economic Dynamic of SMEs and Large Enterprises in GCC.' *Journal of Infrastructure, Policy and Development* 8 (8): 5310.
Alaref, J., J. Koettl, H. Onder, A. Rahman, J. Speakman, R. Beschel, I. A. Malik, A. Vodopyanov, and M. Bakur, M. (2018). *The Jobs Agenda for the Gulf Cooperation Council Countries.* Washington, DC: World Bank Group.
Alharthi, M., M. M. Islam, H. Alamoudi, and M. W. Murad. 2024. 'Determinants That Attract and Discourage Foreign Direct Investment in GCC Countries: Do Macroeconomic and Environmental Factors Matter?' *PLoS One*. 19 (2): e0298129.
Alshehri, N. Z., A. Baquero, M. H. Abd-Elhady, W. M. E. Salama, H. A. Khairy, and R. E. I. Abouelenien. 2024. 'Green HRM and Green Competitive Advantage in Hotel and Tourism Industry: A Mediated Moderation Model Using Ecoinnovation and Green Psychological Climate.' *Geojournal of Tourism and Geosites*. 52 (1): 313–322.
Al-Mulla, Y. 2021. 'The Entrepreneurial State in the Arab Gulf Region: A New Paradigm for Economic Development.' *Journal of Gulf and Arabian Peninsula Studies* 47 (2): 1–22.
Al-Sabah, A. 2018. 'The Rentier State and the Challenge of Economic Diversification in Kuwait.' In *The Political Economy of the Gulf Sovereign Wealth Funds*. edited by Sara Bazoobandi, 113–136. London, NY: Routledge.
Al-Sartawi, A. M. A. M. 2018. 'Ownership Structure and Intellectual Capital: Evidence from the GCC Countries.' *International Journal of Learning and Intellectual Capital*. 15 (3): 277–291.
Amsden, A. 1989. *Asia's Next Giant; South Korea and Lute Industrialization*. New York: Oxford University Press.
Batabyal, A. A., and P. Nijkamp. 2012. *The Regional Economics of Knowledge and Talent: Local and Global Perspectives*. New York: Routledge.
Beblawi, H. 1987. 'The Rentier State in the Arab World.' *Arab Studies Quarterly* 9 (4): 383–398.
Beblawi, H., and G. Luciani. 1987. 'The Rentier State. Nation, State, and Integration in the Arab World.' *Arab Studies Quarterly* 9 (4): 383–398.
Ben Hassen, T. 2022. 'The GCC Economies in the Wake of COVID-19: Toward Post-Oil Sustainable Knowledge-Based Economies?' *Sustainability* 14 (18): 11251.
Boschini, A., J. Pettersoson, and J. Roine. 2012. 'The Resource Curse and its Potential Reversal.' *World Development* 43: 19–41.
Callen, T., R. CheriF, H. Fuad, H. Amgad, and K. Padamja. 2014. 'Economic Diversification in the GCC; Past, Present, and Future.' *Research Papers in Economics* https://www.imf.org/external/pubs/ft/sdn/2014/sdn1412.pdf.
Cieślik, A., and H. Sarhad. 2023. 'Institutional Quality and Inward FDI: Empirical Evidence from GCC Economies.' *Middle East Development Journal* 15 (2): 261–290.
Corden, W. M., and J. P. Neary. 1982. 'Booming Sector and De-industrialisation in a Small Open Economy.' *Economic Journal* 92: 825–848.
Demirbas, D., and M. Demirbas. 2011. *Entrepreneurship and the Entrepreneurial State: Theory, Policy, and Practice*. London: Springer.
Department for Business and Trade. 2024. *Invest 2035: The UK's Modern Industrial Strategy*. HMSO. Closed consultation. Updated 24 November 2024. London: Department for Business and Trade. https://www.gov.uk/government/consultations/invest-2035-the-uks-modern-industrial-strategy/invest-2035-the-uks-modern-industrial-strategy.
Dore, R. 1986. 'Industrial Policy and How the Japanese Do It.' *Catalyst* 2 (1): 45–56.
Draghi, M. 2024a. *The Future of European Competitiveness Part A: A competitiveness strategy for Europe*. European Commission. https://coilink.org/20.500.12592/9kbtlhp on 17 Sep 2025. COI: 20.500.12592/9kbtlhp.
Draghi, M. 2024b. *The Future of European Competitiveness: Sectoral and Horizontal Policy Analysis*. European Commission. https://coilink.org/20.500.12592/9y7v1o8 on 17 Sep 2025. COI: 20.500.12592/9y7v1o8.
Ellen MacArthur Foundation. 2013. *Towards the Circular Economy Vol. 1: An Economic and Business Rationale for an Accelerated Transition*.
Fadol, H. T. A., and D. Alquayt. 2024. 'Asymmetric Impact of Economic, and Structural Factors on the Development of the Non-oil Export Sector in GCC Economies 1992–2022: Structural

Reform Priorities to Sustainable Economic Growth.' *Journal of Economics, Finance and Management Studies* 7 (7): 4148–4160.
Farag, M. M., and R. C. Bansal. 2022. 'Solar Energy Development in the GCC Region – a Review on Recent Progress and Opportunities.' *International Journal of Modelling and Simulation* 42 (5): 579–599.
Ghisellini, P., C. Cialani, and S. Ulgiati. 2016. 'A Review on Circular Economy: The Expected Transition to a Balanced Interplay of Environmental and Economic Systems.' *Journal of Cleaner Production* 114: 11–32.
Gray, M. 2011. 'A Theory of 'Late rentierism' in the Arab States of the Gulf.' CIRS Occasional Paper, 7.
Gray, M. 2018. 'Rentierism's Siblings: On the Linkages Between Rents, Neopatrimonialism, and Entrepreneurial State Capitalism in the Persian Gulf Monarchies.' *Journal of Arabian Studies* 8 (sup1): 29–45.
Haggard, S. 2018. *Developmental States*. Cambridge: Cambridge University Press.
Hasan, S. 2015. 'Workforce Localization in the GCC Countries: Policies, Practices, and the Labor-exporting Countries' Responses.' *Philippine Political Science Journal* 36 (2): 147–166.
Havranek, T., R. Horvath, and A. Zeynalov. 2016. 'Natural Resources and Economic Growth: A Meta-Analysis.' *World Development* 88: 134–151.
Herb, M. 2015. *The Wages of Oil: Parliaments and Economic Development in Kuwait and the UAE*. Ithaca, NY: Cornell University Press.
Hertog, S. 2010. *Princes, Brokers, and Bureaucrats: Oil and the State in Saudi Arabia*. Ithaca, NY: Cornell University Press. http://eprints.lse.ac.uk/55252/.
Hussain, Z. 2020. 'Immigration Policies of the GCC Countries: Implications and Responses.' In *Dynamics of Indian Migration*, edited by S. Irudaya Rajan and Marie Percot, 93–163. London: Routledge.
Hussein, H., O. M. Albadry, V. Mathew, B. S. Al-Romeedy, O. Alsetoohy, M. Abou Kamar, and H. A. Khairy. 2024. 'Digital Leadership and Sustainable Competitive Advantage: Leveraging Green Absorptive Capability and Eco-Innovation in Tourism and Hospitality Businesses.' *Sustainability* 16 (13): 5371.
Hvidt, M. 2013. *Economic diversification in GCC countries: Past record and future trends* (Kuwait Programme on Development, Governance and Globalisation in the Gulf States Research Paper No. 27). London School of Economics and Political Science.
IEA (International Energy Agency). 2021a. *Net Zero by 2050 A Roadmap for the Global Energy Sector*. Paris: IEA Publications.
IEA (International Energy Agency). 2021b. *World Energy Outlook 2021*. IEA: IEA Publications. https://www.iea.org/reports/world-energy-outlook-2021.
Ilyina, A., C. Pazarabasioglu, and M. Ruta. 2024. 'Industrial policy is back, but the bar to get it right is high.' IMF blog.
IMF (International Monetary Fund). 2022. *Regional Economic Outlook: Middle East and Central Asia, Mounting Challenges, Decisive Times*. Washington DC: Middle East and Central Asia Department, International Monetary Fund.
IMF. 2024. 'Expanding Frontiers: Fiscal Policies for Innovation and Technology Diffusion.' Chapter 2 in Fiscal Monitor 2024.
IRENA. 2023. *Renewable energy markets: GCC* 2023. https://www.irena.org/Publications/2023/Dec/Renewable-energy-market-analysis-GCC#:~:text=Renewable%20energy%20deployment%20also%20remains,states%20as%20they%20implement%20their.
Juhász, R., N. J. Lane, and D. Rodrik. 2023. 'The New Economics of Industrial Policy.' Cambridge, MA: National Bureau of Economic Research, NBER Working Paper w31538.
Khalifa, A. A., and A.-J. Ibrahim. 2020. 'Why Gulf Rentier Economies Must Pursue Economic Diversification.' In *Economic Development in the Gulf Cooperation Council Countries: From Rentier States to Diversified Economies*, 191–208. Singapore: Springer Singapore.
Khan, M. I., and S. G. Al-Ghamdi. 2023. 'Hydrogen Economy for Sustainable Development in GCC Countries: A SWOT Analysis Considering Current Situation, Challenges, and Prospects.' *International Journal of Hydrogen Energy* 48 (28): 10315–10344.

Lowe, C., J. Hagen-Zanker, C. Mazzilli, L. B. Khater, L. Pellerano, and A. Hunt. 2023. 'Extending Social Protection to Migrant Workers in the Region of the Cooperation Council for the Arab States of the Gulf (GCC): An Analysis of Enablers and Barriers.' *International Social Security Review* 76 (4): 89–110.

Luciani, G. 2021. 'Framing the Economic Sustainability of Oil Economies.' In *When Can Oil Economies Be Deemed Sustainable? The Political Economy of the Middle East,* edited by G. Luciani and T. Moerenhout. Singapore: Palgrave Macmillan.

Madbouly, A., S. Reyad, and G. Chinnasamy. 2021. 'Analysis for the Knowledge Economy in GCC Countries.' In *The Fourth Industrial Revolution: Implementation of Artificial Intelligence for Growing Business Success*, 403–416. Cham: Springer International Publishing.

Mansfeld, Y., and O. Winckler. 2007. 'The Tourism Industry as an Alternative for the GCC Oil-based Rentier Economies.' *Tourism Economics* 13 (3): 333–360.

Mazzucato, M. 2013. *The Entrepreneurial State: Debunking Public vs. Private Sector Myths*. London: Anthem Press.

Mazzucato, M., and H. L. Li. 2020. 'The Entrepreneurial State and Public Options: Socialising Risks and Rewards.' UCL Institute for Innovation and Public Purpose, Working Paper, WP 2020—20.

Mina, W. 2018. *Labor Market Policies and FDI Flows to GCC Countries* (Working Paper No. 1201). Economic Research Forum. https://erf.org.eg/publications/labor-market-policies-and-fdi-flows-to-gcc-countries/.

Mirzaei, A., and R. S. F. Al-Khouri. 2016. 'The Resilience of Oil-rich Economies to the Global Financial Crisis: Evidence from Kuwaiti Financial and Real Sectors.' *Economic Systems* 40 (1): 93–108.

Mohammed, K. A. S. 2023. 'An Analytical Study of Foreign Direct Investment in the Gulf Cooperation Council (GCC).' *International Journal for Multidisciplinary Research* 5 (2): March–April 2023, 1–11.

Morseletto, P. 2020. 'Targets for a Circular Economy.' *Resources, Conservation & Recycling* 153: 104553.

Nehme, M. 2023. 'Successful Examples of GCC Countries Developing Competitive Advantages, such as Dubai's Rise as a Global Hub for Tourism and Trade, and Saudi Arabia's Ambitious Plans to Lead in Renewable Energy and Technological Innovation.' Vision 2030 initiative(DW) (World Economic Forum) Oxford Business Group.

Porter, M. E. 1985. *Competitive Advantage*. New York: Free Press.

Ramady, M. A., ed. 2012. *The GCC Economies: Stepping up to Future Challenges*. New York: Springer Science & Business Media.

Saberi, M., and A. Hamdan. 2019. 'The Role of Entrepreneurship in Economic Development in Emerging Economies.' *Journal of Entrepreneurship in Emerging Economies* 11 (2): 200–216.

Saif-Alyousfi, A. Y. H. 2021. 'Impact of FDI Inflows on Bank Loans in Gulf Cooperation Council Economies: An Empirical Insight.' *International Journal of Emerging Markets* 18 (2): 505–524.

Samargandi, N. 2021. 'Oil Exploration, Biocapacity, and Ecological Footprint in Saudi Arabia.' *Environmental Science and Pollution Research* 28 (39): 54621–54629.

Samargandi, N., J. Fidrmuc, and S. Ghosh. 2014. 'Financial Development and Economic Growth in an Oil-Rich Economy: The Case of Saudi Arabia.' *Economic Modelling* 43: 267–278.

Saudi Vision 2030. https://www.vision2030.gov.sa/en.

Sawyer, M. 1992. 'Reflections on the Nature and Role of Industrial Policy.' *Metroeconomica* 43 (1-2): 51–73.

Sawyer, M. 2000. 'The Theoretical Analysis of Industrial Policy.' In *Industrial Policies After 2000*, edited by W. Elsner and J. Groenewegen. Dordrecht: Springer Science & Business Media.

Sawyer, M. 2021. 'Financialisation, Industrial Strategy and the Challenges of Climate Change and Environmental Degradation.' *International Review of Applied Economics* 35 (3-4): 338–354.

Sturm, M., J. Strasky, P. Adolf, and D. Peschel. 2008. 'The Gulf Cooperation Council Countries-economic' Structures, Recent Developments and Role in the Global Economy.' ECB occasional paper 92.

Tseng, C. Y. 2014. 'Technological Innovation Capability, Knowledge Sourcing and Collaborative Innovation in Gulf Cooperation Council Countries.' *Innovation* 16 (2): 212–223.
UAE Circular Economy Policy. 2021. https://www.uaelegislation.gov.ae/en/policy/details/sy-s-dol-l-m-r-t-laarby-lmthd-ll-kts-d-ld-ry-2021-2031#:~:text=The%20UAE%20Circular%20Economy%20Policy%20was%20issued%20in%202021%2C%20representing,the%20UAE%20in%20achieving%20sustainable.
UNDP (United Nations Development Programme). 2022. Arab Human Development Report 2022: Expanding Opportunities for an Inclusive and Resilient Future.
Wade, R. 1990. *Governing the Market: Economic Theory and the Role of Government in East Asian Industrialization*. Princeton, NJ: Princeton University Press.
World Bank. 2018. *Gulf Economic Update: Unlocking the Potential of the Gulf Economies*. Washington, DC: World Bank. https://www.worldbank.org.
World Bank. 2020. *The Middle East and North Africa's Turning Point: Opportunities for Inclusive Growth and Sustainable Development*. Washington, DC: World Bank Publications.
World Bank. 2023. *Gulf Economic Update: Structural Reforms and Shifting Social Norms to Increase Women's Labor Force Participation*. Washington, DC: World Bank.