



Advancing industrial policy

Building governance for a sustainable industrial future in Saudi Arabia and beyond



November 2024
KPMG Professional Services

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Foreword

Saudi Arabia's industrial sector will play a pivotal role in shaping the nation's future economy and achieving the outlined objectives in Vision 2030. Enhancing competitiveness and nurturing the growth of emerging industries will be crucial to meeting these objectives, encouraging both localization of domestic consumption and export-driven growth.

Despite the potential of the industrial sector, the market alone will not be sufficient to spur the necessary economic shift. Government intervention through industrial policy will be critical as Saudi Arabia continues its economic transformation. These policies will provide the necessary support to encourage innovation and technology adoption, attract investment, foster sector development, and promote export expansion.

The Kingdom has iterated five-year development strategies since the 1960's. Its strategies have served as a general planning framework to achieve national objectives, incorporating pragmatic development goals. In spite of these development strategies, the Kingdom has struggled to align the proper set of policies to achieve their objectives. The right set of policies build on strategies, creating the concrete environmental factors that enable progress towards national objectives.

Designing effective industrial policies faces several challenges – as proven in other countries around the world. The success of these policies hinges on selecting the right instruments and targeting industries with the most potential for growth, which requires a data-driven approach and continuous adaptation to new challenges. A critical issue is balancing targeted support without falling into the trap of “picking winners” and distorting market competition. Ensuring transparency and accountability in policy implementation is essential to maintain public trust and prevent misuse of resources. Moreover, there is the challenge of socializing both the risks and benefits of industrial investments, as profits often remain privatized while risks are borne by taxpayers.

Furthermore, economies do not operate in a vacuum. Intricate trade and manufacturing networks present the risk of a race-to-the-bottom, zero-sum mentality towards industrial development. Therefore, industrial policies should be designed to promote industries that complement and integrate into global value chains rather than attempting to isolate or protect domestic excessively.

Finally, there is the overarching challenge of embedding knowledge acquisition and fostering human capital development to support innovation and sustainable industrial growth. These challenges require a nuanced and flexible approach to industrial policy that is tailored to the Kingdom's unique economic and social context.

By leveraging targeted industrial policies focused on market-oriented reforms, Saudi Arabia can hone its competitive edge, drive sustainable economic growth, and achieve the transformative goals set out in Vision 2030. This comprehensive approach will not only support the development of key industries but also position the Kingdom as a significant player in the global economy.

As the Kingdom continues its industrial development journey, it must remain aware that the efficacy of industrial policy is not guaranteed. Industrial policy is not a one-size-fits-all toolset; it must be tailored to meet the specific needs of the economy while remaining sufficiently flexible to adapt to future challenges. The success of these policies relies on careful design and implementation, continuous monitoring, and the ability to adjust to evolving economic conditions.



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National programs driving industrial development

Vision 2030 has laid down objectives to transform the economic structure and social fabric of Saudi Arabia. It aims to diversify the Kingdom's economy beyond its oil dependence, targeting key sectors such as renewable energy, tourism, entertainment, and advanced technologies. The current state of development presents unique challenges, including the need for enhanced human capital capable of thriving in new industries and an industrial policy system that supports local enterprises. Against this backdrop, the role of industrial policies becomes paramount in ensuring the realization of Vision 2030's objectives.

National Industrial Development and Logistics Program

The National Industrial Development and Logistics Program (NIDLP) is an integral pillar of Vision 2030. Launched in 2019, NIDLP focuses on transforming Saudi Arabia into a global logistics hub and a leading player in the energy, mining, logistics, and industry sectors.

The program aims to create mutually bolstering synergies between industries and improve legislation to foster a more competitive and efficient business environment.

Key initiatives include investing in renewable energy projects, enhancing mining sector regulations, and promoting local content through the "Made in Saudi" program.

National Industrial Strategy

Complementing NIDLP and enabling economic structural change, the National Industrial Strategy (NIS) embodies a significant shift towards a more sustainable, broader, and deeper economic structure.

Launched in late 2022, the NIS aims to increase the contribution of the non-oil industrial sector to the GDP from US\$88.26 billion in 2020 to US\$377.06 billion by 2035. It also seeks to create around 2.1 million direct and indirect industrial jobs by 2030 and triple the value of industrial exports to reach \$148 billion by 2030.

The NIS focuses on twelve priority industrial sectors, including chemicals, medical products, renewable energy, aviation, and military manufacturing, each chosen for their potential to localize supply chains and

complement global trends. The strategy outlines four key objectives: building resilient supply chains, developing a robust industrial ecosystem, enhancing international trade, and fostering a culture of innovation.

Industrial policy efforts

Saudi Arabia's industrial policy, as part of Vision 2030, is focused on diversifying the economy away from oil-based industries like mining, industry, logistics, and energy. NIDLP is a key component of this strategy, aiming to transform Saudi Arabia into a leading global industrial powerhouse and logistics hub. The program encourages substantial foreign investment and leverages Saudi Arabia's strategic geographic position, connecting three continents.

The NIS further supports this ambition by targeting a variety of industrial sectors for development, including high-tech industries, renewable energy, and the military sector. It aims to increase the industrial sector's contribution to GDP significantly by 2035, create millions of jobs, and boost the value of industrial exports. The strategy emphasizes building a flexible, globally competitive national industrial economy through improved supply chains, legislative and regulatory environments, and increased local content.

Moreover, Vision 2030 also includes programs like 'Made in Saudi' to enhance local content in both oil and non-oil sectors, aiming to position the Kingdom as a leader in the Fourth Industrial Revolution. This includes a strong push towards sustainable and renewable energy sources, aligning with global efforts to reduce carbon emissions and promoting environmental sustainability.



Enterprise plan

Five Economic Zones have been launched, each targeting specific industries and granting tax and repatriation exemptions along with bespoke incentives granted on a case-by-case basis.



Concessional lending

Implemented by the Saudi Industrial Development Fund (SIDF) and Saudi EXIM, provides below-market loans for companies in promoted sectors.



Shareek

Designed as a platform to enhance public-private collaboration and spur local investment into major projects and identify new business opportunities.



Made in Saudi

Launched by NIDLP in 2021, offers training workshops, funding for small- and medium-sized enterprises (SMEs), customs facilitation and preferential sourcing for locally manufactured products.

Industrial policy design

Designing industrial policies entails a strategic approach that leverages a set of proven instruments to spur economic transformation. The success or failure of these policies depends on several critical factors, each playing a role in shaping the policy's impact, efficiency, and sustainability.

Optimizing the impact of industrial policies

At the core of effective industrial policy lies the deliberate selection of instruments. Policymakers must carefully consider which tools to employ and target them towards industries that hold the greatest potential for growth and development. This requires a data-driven understanding of industry-specific needs and dynamics, ensuring that the chosen instruments can effectively address industrial hurdles and be applied to sector-specific opportunities. The right mix of tools, tailored to the appropriate industries, is paramount in optimizing the impact of industrial policies.

Continuous evaluation and adaptation are essential components of successful industrial policies. Policies should not be static; they must evolve in response to new challenges and opportunities. Continuous monitoring and evaluation enable policymakers to assess the effectiveness of their policies and make informed adjustments. This iterative process ensures that policies remain relevant and effective, driving sustained economic growth and development.

Picking winners or horizontal strategies?

Industrial policy gets a bad reputation for its association with “picking winners”; that is, deciding on which firms should prosper, while allowing others to fail. This type of criticism is justified, as industrial policies have been used to prop-up otherwise unviable companies through subsidies, export promotion, and tax breaks. This can create major inconsistencies in the market, where the winners are protected at the cost of market competition and natural selection principles.

The right people

Once the value-added sectors and the policy tools are identified, a robust governance framework should be implemented to ensure effective implementation and oversight of industrial policies. This framework should enable flexibility in applying the policy, allowing for necessary adjustments in response to changing environments and inefficiencies.

Effective governance structures provide the foundation for transparency and accountability, ensuring that policies are implemented with integrity and public trust is maintained. Policymakers must establish clear roles and responsibilities, enabling efficient coordination and communication among stakeholders to prevent forces from undermining the effectiveness of industrial policies. This includes embedding transparency and accountability measures within the governance framework to

ensure that incentive disbursements are not manipulated for personal gain. By maintaining the integrity of policy implementation, policymakers can foster a fair and competitive business environment. Therefore, when designing industrial policies, policymakers should focus on fostering an environment that benefits all firms in a sector, rather than favoring specific companies. This can be achieved by implementing transparent criteria for support and ensuring that assistance is temporary and performance-based.

Additionally, targeting sectors with the highest spillover effects is crucial. Investing in public goods, such as education, infrastructure, and research and development, can generate significant benefits. These investments produce knock-on effects that positively impact the entire economy and society.

Solving the risk dilemma

Industrial policy serves as a means to socialize the risk of investing in new sectors or augmenting existing ones. Government revenue (i.e., taxes) are disbursed to private companies so novel economic structures can be tested. Unfortunately, benefits (profits) are often privatized to the owners of firms in the new growth sectors, whereas risk is socialized to taxpayers and governments.

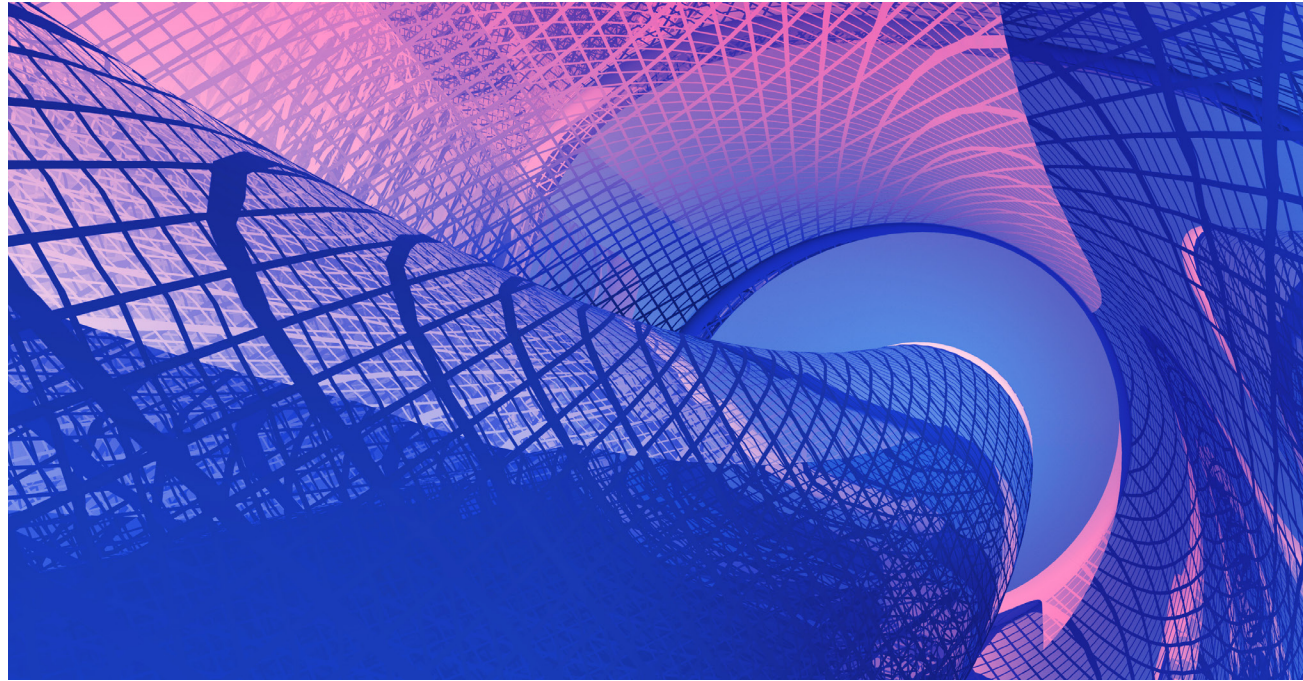
Industrial policies can be designed in a manner that both socializes the risk and the benefits. This can be in the form of non-controlling preferred share transfer or in partial ownership of intellectual property derived from R&D grants and incentives.

Ensuring efficient development

Policymakers must be mindful in crafting industrial policies. There is not only the risk to domestic industries in the case of distortionary incentives; other countries may implement compensatory policies in their own countries.

When partner countries escalate their industrial policies into broader trade wars, they may impose tariffs and trade barriers, reversing progress in global supply chains, increasing costs, and negatively impacting consumers and businesses. This can also strain diplomatic relations, leading to increased geopolitical tensions and reduced international cooperation on critical issues like climate change and security.

Thus, the design and implementation of industrial policy must ensure that only competitive industries with natural advantages are selected based on market signals. This approach can minimize the risk of trade conflicts and promote sustainable economic growth.



Embedding knowledge acquisition in industrial policy:

Government intervention via industrial policies is essential to address market failures—situations where market mechanisms alone do not overcome growth constraints. The economic growth of the Kingdom will be characterized by ongoing institutional and technological evolution supported by subsidized development. As the economy adapts and expands, the requirements for physical and human capital will evolve concurrently. The Kingdom's abundant capital resources coupled with its robust network of development institutions is a strength that needs to be coupled with proper allocation to the appropriate sectors, projects, and firms. At its core, human capital remains the primary impediment to growth. Therefore, fostering knowledge transfer and promoting a lifelong learning mindset will be pivotal in driving innovation and industrial development.

To meet these evolving needs, the government can adopt a coordinating and enabling role, directing activities to align with the changing economic landscape. This may involve promoting technology transfer or providing vocational and technical training to ensure the workforce's skills match current and future market demands.

The innovations and knowledge generated in sectors targeted by industrial policy can create positive spillover effects across the economy. For instance, China's 2006 MRP industrial policy focused on Next-

Generation Telecommunications technology, paving the way for the widespread adoption of 5G. This technological advancement has significantly improved productivity and laid the groundwork for further innovations, such as AI-assisted vehicles and the Internet of Things (IoT).

What is too much intervention?

Industrial policy should be tailored to the Kingdom's comparative advantages, whether they stem from natural endowments or acquired capabilities. The 20th century offers numerous examples of developing countries using industrial policies to establish or sustain globally uncompetitive industries. Governments in these countries often provided financial subsidies, tax incentives, and controlled input prices. While such measures enabled short-term operational success, they also caused economic distortions that hindered long-term potential.

Protectionist policies often stifled competition and diverted public resources from more productive opportunities. In the case of France under Francois Mitterrand, the government spent close to US\$10.5 billion to acquire industrial companies and banks in the hopes of reviving the economy by forcing companies to modernize, innovate, and provide adequate capital resources. The result was an unambiguous failure, as losses ballooned from US\$226 million in 1980 to US\$4.6 billion in 1982.



Industrialization in other countries



China

The beginning of Chinese industrial policy

Following the reemergence of Deng Xiaoping in 1978, market forces and relaxing of state control of supply and demand dynamics fueled China's growth. State-owned enterprises were reformed and allowed to keep a portion of the profits for reinvestment. Smaller SOEs were privatized and "zombie" SOEs (non-performing) were hewed.

Prior to 2006, post-Mao China didn't have an active industrial policy, narrowly defined as a proactive set of policies designed to sectoral composition of the economy. Industrial Policy in 2006, China promulgated the Medium and Long Term Program of Science and Technology (MLP). The plan laid out a 15-year strategy to bolster China's industrial sector, emphasizing "indigenous innovation." The strategy's primary aim was to reduce reliance on importing foreign technology to spur economic growth and reverse environmental degradation caused by rapid industrialization.

Incentives for development of the priority sectors and R&D included direct funding and more than 100 percent tax deductions for research expenditures. Funding for the promotion of the priority sectors and research was provided by state-owned banks and economic & finance ministries.

Megaprojects

The MLP provided funding to prioritize 16 product-specific megaprojects. The government prioritized areas that were believed to have the largest spillover effects. These projects would shift China's model from importing technology to developing home-grown solutions. The projects included developing next-gen telecommunications technology (5G), local satellite mapping technology (Beidou), and manufacturing civilian aircrafts (C919).

Results

The MLP laid the groundwork for a significant shift towards a robust industrial policy, emphasizing indigenous innovation and orchestrating significant government investment in a wide array of strategic sectors. This initiative included the rollout of numerous Megaprojects that targeted key technological advances across various industries, aiming to secure China's competitive edge in the global economy.



South Korea

Government strategy and industry support

The South Korean government's industrial policy experiments began with the Heavy and Chemical Industries (HCI) drive launched in 1973, aimed at establishing a self-reliant economy with specific export and income targets. This plan involved massive investments in key sectors such as steel, electronics, and machinery, which were targeted as the drivers of future industrial growth. The government coordinated policies that directly financed these industries, including concessional loans from the National Investment Fund.

Education and skill development

Education has been a cornerstone of South Korea's industrial policy, with significant enhancements to technical and vocational education. The government expanded educational programs to produce a workforce skilled enough to support industrial growth, emphasizing practical training and technical certifications. Technical high schools and institutions like the Korea Institute of Science and Technology (KIST) and Korea Advanced Institute of Science and Technology (KAIST) were established to bolster the country's R&D capabilities and innovation potential.

Research and innovation

The establishment and expansion of R&D facilities were pivotal in transitioning South Korea to an innovation-driven economy. From the early 1970s, there was a significant increase in R&D expenditure, including an increasing share from the private sector.

Economic challenges and policy adjustments

Despite the rapid industrialization and economic growth, the HCI drive led to significant economic imbalances by the late 1970s, necessitating a stabilization program. The focus on heavy industries had created an overheated economy with high levels of debt, to austerity policies that emphasized stabilization and economic restructuring to address market distortions.

Transition to high technology

During the late 1970s and 1980s, South Korea began to focus on high-technology sectors such as the IT industry. This shift was part of a broader strategy to diversify the industrial base beyond heavy industries. The government played a crucial role in identifying and supporting industries with significant growth potential, even amidst debates about the viability of certain sectors like IT.



Germany

The dual education system

Germany's dual education system, a centerpiece of its industrial strategy, significantly benefits from government backing. The government provides financial support and regulatory frameworks that encourage companies to participate in apprenticeship programs. For example, the government subsidizes part of the apprentice's salary and offers tax incentives to companies providing training. This system is bolstered by laws that ensure high standards of training across all industries, thereby maintaining the quality and relevance of the skills being taught.

Government and industry collaboration

The German government fosters collaboration between industry and academia to sustain its competitive advantage in technology and manufacturing. The High-Tech Strategy 2025 aims to promote Germany as a leader in future technologies by funding research in areas such as artificial intelligence, green energy, and quantum computing. This strategy is designed to create partnerships between public research institutions and private companies to translate scientific research into market-ready products and services.

Research, development, and innovation

Germany's commitment to maintaining its industrial base is bolstered by its financial strategies, which include significant investment in R&D activities. The government offers grants and tax relief for R&D projects to spur innovation within industries critical to the economy, such as automotive, engineering, and biotechnology. Additionally, the government's investment in non-university research institutes, like the Max Planck and Fraunhofer Societies, provides essential resources for developing new technologies.

Sustainable industrial practices

The government's role extends into driving sustainable industrial practices through regulatory measures and funding mechanisms. The Renewable Energy Sources Act (EEG) guarantees fixed prices for renewable energy generation, providing a stable, predictable environment for investments in green technologies. Additionally, the government's National Hydrogen Strategy aims to position Germany as a leader in hydrogen technology, supporting research and development through funding and by fostering international cooperation on hydrogen projects.

Effective implementation policy

The need for sustainable industrial growth and development requires an effective implementation of policies that can achieve the goals of the country when it comes to enhancing its industrial competitiveness and integration with the global value chain. This efficacy could be hindered by various challenges, including data availability, agile adaptation to market dynamics, knowledge acquisition, and human capital development.

The effective integration with the global value chain necessitates policies promoting specific sectors with growth potential and competitive advantages, enhancing the physical and digital infrastructure, as well as improving logistics to facilitate market access, streamlining business friendly regulations free from bureaucratic hurdles, introducing export credit guarantees, market intelligence services and other export competitiveness tools and finally, enacting regional cooperation initiatives able to facilitate trade, knowledge sharing and collective/ bilateral win-win policies.

To fully unlock the industrial sector and unleash its potential and resilience, it is expected to see the Kingdom continuing on its industrial modernization journey with higher stakeholders and international partners' engagement, which secure continuous relevance and high responsiveness of policies to the dynamic global economic landscape. At the core of this journey, we expect to witness a focus on the following essential policy enablers:

Data availability

The lack of harmonized data across institutions can lead to conflicting policies and poor resource allocation, which in turn impedes the ability of the country to formulate robust industrial policies. A national/sectoral accurate and timely database is essential for informed decision-making, monitoring policy outcomes, and evaluating the effectiveness of various initiatives across the various sectors and sub-sectors of focus in Saudi Arabia. Hence, it is highly advisable that the Kingdom prioritize developing a comprehensive statistical framework to gather/collect data on industrial performance, technological advancement, and labor market developments, as well as creating a set of clear processes for data sharing mechanisms. This can be facilitated through collaboration with relevant international and national organizations.

Market responsiveness

The need for an "ever evolving flexible legislative framework" is essential for policymakers in responding to disruptive technologies or sudden changes in global demand/consumer preferences. For industrial policies to be effective, they must be adaptable to these shifts. One successful approach to fostering such adaptability, is the implementation of pilot programs that allow for experimentation and learning. By testing policies on a smaller scale before a broader rollout, the kingdom can gather insights, identify potential pitfalls, and make necessary adjustments.

Human capital development

The Kingdom should embark on a journey to develop a skilled workforce that can adapt to changing industrial demands, locally, regionally, and globally. This could be achieved through adequate education and training systems to avoid skills mismatch in the labor market. This can be achieved through engaging industry stakeholders in curriculum design, as well as promoting lifelong learning and continuous professional development to help Saudi talents and workers adapt to new technologies and processes. Public-private partnerships can play a crucial role in facilitating such training programs, ensuring alignment between educational outcomes and industry requirements.

Knowledge acquisition

Lack of knowledge acquisition is a barrier for enhancing a country's industrial capabilities. Saudi Arabia should fill the gaps of technological know-how and innovation capacities needed to compete globally. This in turn would bolster Saudi Arabia's innovation ecosystem, leading to higher productivity and competitiveness.

To overcome this barrier, the Kingdom's new set of industrial policies should encourage research and development through incentives, such as foregone revenues (tax credits/tax breaks) or grants for firms investing in innovation. Further, fostering partnerships between universities, research institutions, and industry can enhance knowledge transfer and commercialization of research outcomes.

Policymakers could leverage bilateral and multilateral agreements to enhance technology transfer and FDI. Establishing technology parks and innovation hubs can also stimulate knowledge exchange and entrepreneurship, creating a conducive environment for innovation.

As Saudi Arabia strives for economic diversification and resilience, well-structured industrial policies serve as the backbone for developing a robust manufacturing base, essential for sustainable growth. Government investments in infrastructure, logistics, and advanced manufacturing techniques empower both Saudi and foreign private sectors to increase the Saudi industrial value chain to integrate with the global value chain, enhancing the competitive positioning on the global stage. Furthermore, adaptability in policy frameworks ensures that industrial policies remain relevant amid rapid global changes. Continuous evaluation and refinement of the said policies based on market conditions allow Saudi Arabia industrial sector to respond effectively to new challenges and opportunities.

Conclusion

Saudi Arabia's industrial policy is at a critical juncture to achieve its Vision 2030 objectives for economic diversification and development. The experiences of other countries, such as China, South Korea, and Germany, offer valuable lessons in designing and implementing industrial policies that can spur economic growth, innovation, and job creation. Saudi Arabia can benefit from adopting targeted policies focused on industries with significant potential for growth and spillover effects. These policies should be tied to specific performance metrics, ensuring that resources are efficiently allocated to sectors with the highest potential for economic transformation.

Additionally, establishing specialized financial institutions to provide long-term, low-interest loans and boosting public funding for research and development are crucial steps. These measures can support the growth and modernization of SMEs and foster technological advancements. A robust vocational education system, similar to Germany's dual system, can help create a highly skilled workforce tailored to the needs of specific industries. This system should be supported by government incentives and regulatory frameworks that encourage companies to participate in apprenticeship programs.

While protective measures may be necessary to nurture nascent industries, it is essential to prepare these industries for global competition. This requires gradually exposing them to international markets and integrating them into global supply chains. Industrial policies should address market failures by supporting sectors that may not naturally attract investment but have high potential for positive externalities. The government can play a

coordinating and enabling role, promoting technology transfer and providing opportunities for vocational and technical training.

Continuous monitoring and evaluation of industrial policies are crucial for adapting to evolving economic conditions and ensuring their effectiveness. Policymakers must remain flexible and responsive to new challenges and opportunities, making adjustments as needed.

By carefully designing and implementing these strategies, Saudi Arabia can achieve sustainable economic growth, enhance its global competitiveness, and realize the transformative goals of Vision 2030. The success of these policies will depend on the government's ability to strike the right balance between intervention and market forces, fostering an environment that encourages innovation, investment, and inclusive economic development.

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