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IDEATION CENTER INSIGHT

Potential and pitfalls in industrial policy

What works
(and what doesn't)
in state-led
diversification



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EXECUTIVE SUMMARY

State-led diversification, if implemented properly, has the potential to unlock significant value for Gulf Cooperation Council (GCC) countries. This is the case more than ever, as the prevailing global mantra since the 1980s, i.e., “leave it to the market,” has given way to increased state involvement in areas such as targeted subsidization and credit provision, trade protection, and direct investment in productive assets.

Governments have an established role to play in economic growth and diversification everywhere: They provide public services, their stability is a determinant of investor confidence, and their regulatory frameworks allow modern markets to function. Yet, opinions differ as to how involved government should be beyond this.

The degree to which state involvement is beneficial depends to some extent on the developmental context of a country. More advanced, already diversified economies operating at the technology frontier have the advantage of large, private corporations and thus are less in need of state involvement. Late developers, by contrast, may depend on state involvement to compensate for their nascent private-sector muscle. The success of government involvement among late-developing countries varies drastically, however, from high-performing late industrializers to those littered with white elephants and unrealized ambitions.


State-led economic development also tends to be particularly important in resource-rich economies such as oil and gas producers, given that many of the revenues from those assets accrue to the state. Government, then, wields considerable economic influence insofar as it has an outsized role in the allocation of financial resources. Again, however, the degree of success has varied drastically.

GCC countries fall into both of the above-mentioned categories: They are late industrial developers and resource-rich economies. Since at least the 1970s oil boom, these governments have indeed driven diversification through direct investment and other incentives. But over the last decade or so, the sectoral ambitions of GCC economies have substantially widened including in areas where the advantage of competitive energy prices is less obvious.

This expansion comes as industrial policy (i.e., state involvement in economic development) has come back into vogue globally, which provides new opportunities for GCC economies. As government intervention in markets grows, other international trends such as nearshoring and supply chain de-risking are pushing the diversification of partnerships including in new fields like renewable energy. One major factor in those trends is Western economies' shrinking reliance upon Chinese exports.

All of this presents plenty of opportunity for GCC economies.

Done right, state involvement via industrial policy can unlock potential; That said, heavy-handed intervention can also get it wrong by locking in inefficiencies and wasting resources. Getting it right will depend on finding the right balance. Looking at seven key lessons from the past provides crucial insights as well as actionable advice:

-  Establish early openness to competition
-  Build the capacity to measure performance
-  Make support for new activities conditional on performance
-  Set consistent and narrow priorities for industrialization
-  Use high-capacity “lead agencies”
-  Crowd in the private sector as soon as possible
-  Move up value chains systematically

By leveraging these seven lessons learned, GCC countries can unlock major potential as they diversify their industrial portfolios. They have many of the ingredients for successful state-led industrial policy. Likewise, however, the scale and breadth of GCC diversification ambitions could also lead to missteps. Wise leadership—both in government and in the private sector—would do well to embrace historical lessons of failure and success to find the right path to state-led industrial diversification.

INTRODUCTION

Industrial policy is back with a vengeance. This much is clear. What is less clear, however, is how to do industrial policy well. Yet with the right approach—knowing where to intervene and when to hold back—state-led diversification has great potential for Gulf Cooperation Council (GCC) countries.

During the last decade or so, governments all around the world have deployed a growing range of policy tools to push their economies into new sectors and technologies. The COVID crisis and geopolitical tensions between China and the U.S. have only accelerated this shift. The prevailing mantra of economic growth and diversification since the 1980s was to leave it to the market. Now, however, states are deploying regulation, subsidies, tax incentives, credit provision, trade protection, and direct investment to improve economic resilience and deepen strategic sectors such as healthcare, artificial intelligence (AI), quantum computing, and renewables. At the same time, experts continue to dispute what the right extent of state involvement is and which policy designs are the most successful.

This report explores how to make industrial policy work in the GCC countries (Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates, or UAE).

The report takes a deep dive into:

- Why the state is bound to play an unusually large role in economic development in the GCC, making some form of industrial policy inevitable
- The seven key lessons for how to use state intervention for economic diversification into new sectors, drawing on the experience of some of the world's most successful cases of state-led industrialization
- The kinds of interventions that are best avoided, based on a review of failed state-led development projects
- The importance of service activities in modern, outward-oriented economies; and how they can complement the manufacturing activities traditionally associated with industrial policies

SETTING THE STAGE: WHEN THE STATE MATTERS

Government has an established, important role to play in economic growth and diversification everywhere. First, governments provide key public services in areas as diverse as education, welfare, infrastructure, and defense. Second, the quality of government institutions is a key determinant of investor confidence. Finally, modern markets can function only within sophisticated, state-provided regulatory frameworks.

There is, however, considerable disagreement about the degree to which governments should actively guide their economies into specific sectors and types of production. Many economists maintain that states should not “pick winners” and that diversification is best left to market forces. This argument is more convincing for the most advanced economies, which operate at the technology frontier and which have large, private corporations with deep R&D budgets and a multinational presence.

A country that has embarked on its development journey late, by contrast, typically has a relatively underdeveloped private sector and thus will find it difficult to rely purely on private markets to catch up with advanced economies. For such “late developers,” organically growing private markets cannot provide the scale necessary to compete with more advanced countries. As Harvard economic historian Alexander Gerschenkron pointed out in a still-frequently-cited 1951 essay, modern production is capital- and technology-intensive. For a country to break into such modern industries as steel production and shipbuilding—or, more recently, fields such as semiconductor manufacturing and solar panel production—government needs to intervene, be it by providing capital, training, and temporary trade protection or even through entrepreneurship in the shape of direct state investment.

A government’s deep role in late-developer countries does not guarantee success; in fact, results of government intervention vary drastically around the world. Consider the most successful cases of economic catch-up outside the Western world, such as late industrializers South Korea, Taiwan, and Singapore. Each case involved top-down government guidance and support in terms of credit policies, support in training and R&D, temporary trade protection, and infrastructure provision. Some of the least competitive and efficient economies in the world, however, are also characterized by deep state intervention. The governments of countries such as Algeria, Iran, and Venezuela held great ambitions of state-led industrialization, yet their economies are littered with white elephants and produce very few internationally competitive goods or services.

There is another category of countries in which the state typically has a particularly deep economic role: resource-rich economies, especially oil and gas producers. Because a great deal of the revenue from the resource sector—in some cases, all of it—accrues to the state, government typically controls larger financial resources relative to the private sector and households. The allocation of these resources, then, plays a vital role in driving economic demand and development of non-oil sectors, even if the latter are technically in private hands. In many of these countries, moreover, pre-oil economies were comparatively weak and undiversified; as a result, there was a particular need for the state to develop the economy with its newfound oil revenues. This has historically implied a greater need for government to help pick sectors and deliberately develop them using natural resource rents.

But economic development outcomes among resource-rich economies, again, vary drastically, from well-governed Norway and international commercial hub Dubai to underdeveloped and poorly governed cases like Equatorial Guinea. Just as larger state resources provide opportunities for rapid catch-up, it seems they can also set the stage for ill-chosen investments.

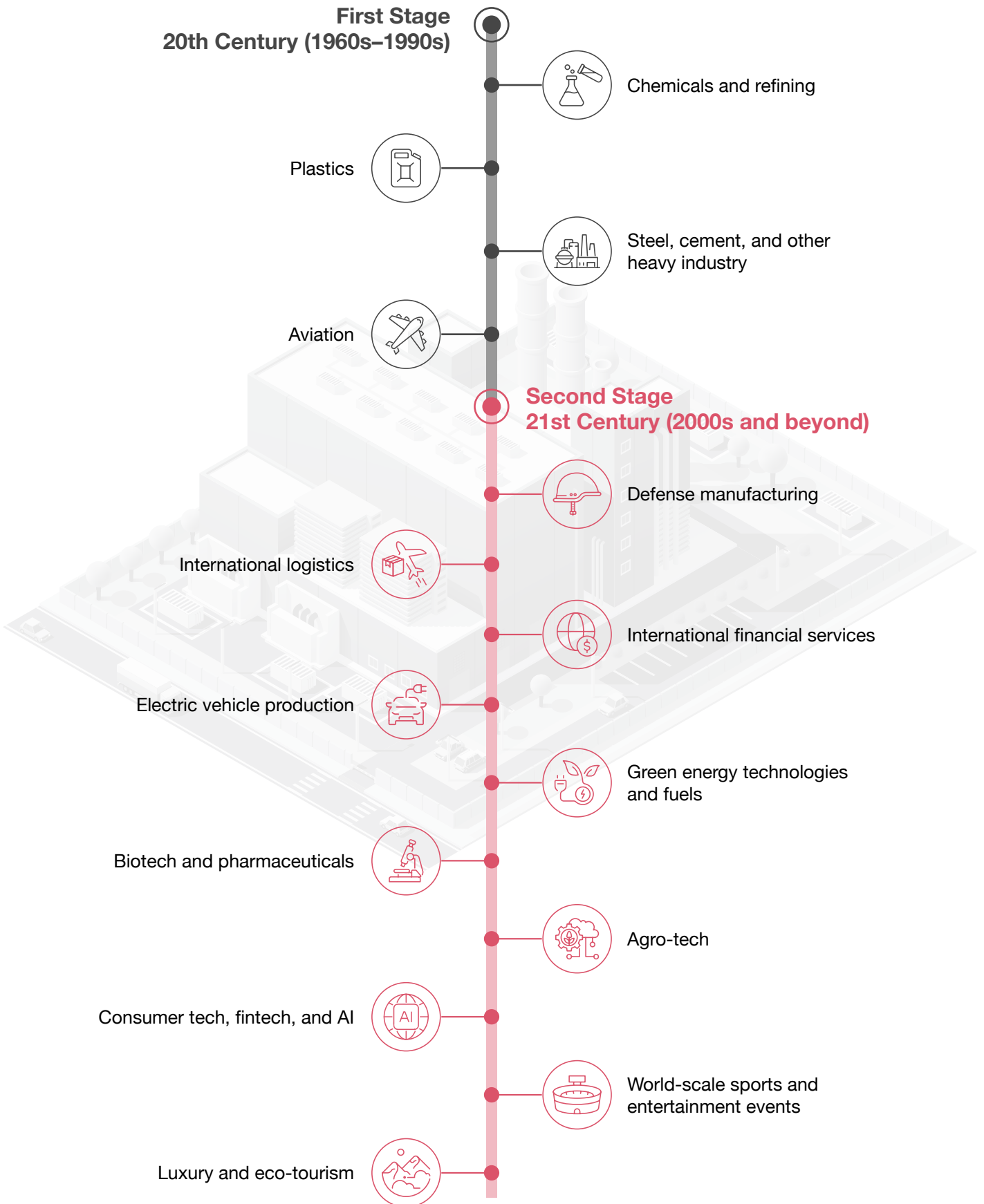
The context of GCC economies

The GCC economies, critically, fall into both above categories: They are late developers that began their modern economic diversification journeys only a few decades ago; likewise, they are resource-rich, giving states a uniquely large role in the economy. Since at least the 1970s oil boom, GCC governments have played an active role in driving diversification through direct investment and the provision of incentives in such areas as refining, petrochemicals, steel, and aviation—with considerable success.

Yet during the last decade or so, GCC economies have entered a new era of state-led development in which their sectoral ambitions have substantially widened. This expansion includes areas in which the GCC's most clear-cut comparative advantage—competitive energy prices—is much less obvious, including tourism, technology, high-tech manufacturing, international logistics, and financial services. In some cases, these bets have earned favorable returns; in many others, it remains to be seen how things will play out *(for an overview, explore the timeline on the next page)*



The timeline of old and new sectors for industrial policy in the GCC



This expansion has been happening at a time when industrial policy has come back into vogue globally. This provides new opportunities for GCC economies: As liberalizing international institutions such as the World Trade Organization find their influence constrained, governments can get away with deeper market interventions in the shape of temporary protections, subsidies, and other forms of targeted support for key sectors. Long-term international trends of nearshoring and de-risking of supply chains also mean that many governments and businesses are seeking to diversify their economic partnerships, creating opportunities for new suppliers. The most prominent factor is the move of Western countries and corporations away from excess dependence on Chinese exports, but firms and governments are also seeking broader diversification away from single suppliers in order to reduce the risk of supply chain disruptions.

There are particular opportunities for GCC economies in the global energy transition, in terms of both rolling out renewables domestically and exporting low-carbon industrial products and clean fuels such as blue and **green hydrogen**. The increased appetite for industrial policy also means additional risks, however: The new sectors GCC governments are now targeting are, by and large, more technologically sophisticated than older ones. Moreover, international competition within them is steeper than competition for the region's established energy-intensive industries. Heavy-handed government intervention can more easily get it wrong by normalizing inefficiencies and wasting resources. Smart industrial policy design, therefore, comes at a premium.

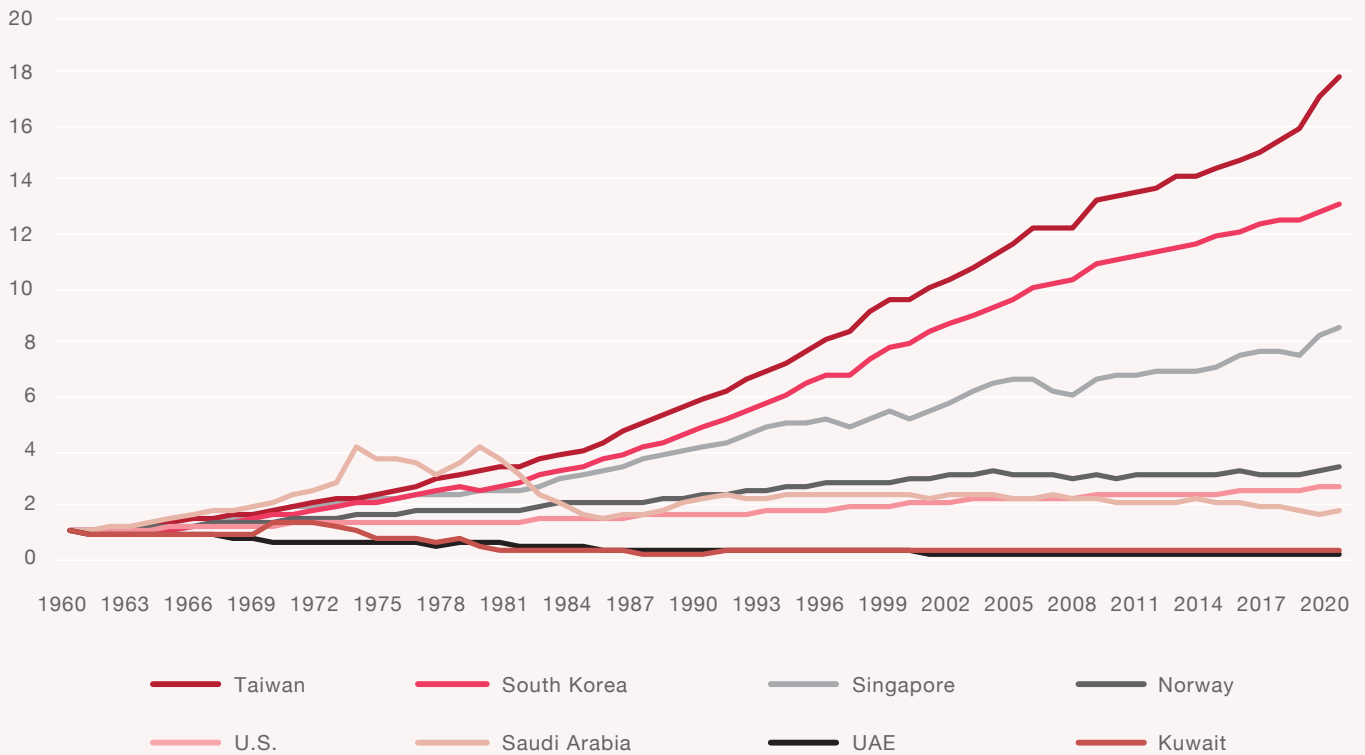
The study of industrial policy

Research on industrial policy is relatively underdeveloped within the field of economics. Many of its key insights are derived not from formal models or econometric research, but rather from in-depth historical investigations of individual countries. This report, therefore, bases much of its policy insight on the study of actual cases of state-led development. This includes positive examples including Norway, Singapore, South Korea, and Taiwan; likewise, it examines negative examples taken from less successful industrializers including Algeria, Iran, and—in the case of state-owned heavy industries—Indonesia. It also draws on positive and negative examples from the GCC's own industrial history. In this historical investigation, the report often reaches rather far back in time, sometimes all the way to the golden age of Asian industrial policy in the 1960s, before state-led industrialization fell into disrepute in the 1980s. This is both because there is more empirical material—cases from this earlier era are particularly well studied—and because long-term outcomes of industrial strategy often cannot be assessed until decades after policy initiation. It is much harder to evaluate the impact of recently initiated industrial policies such as the Inflation Reduction Act in the U.S., given that it has barely been fully implemented.

A long-term perspective is also justified by the fact that choosing policies that put a country on the right path toward diversification can make a huge difference in the long run. Exhibit 1 shows long-term labor productivity trends for a number of successful late industrializers and a number of laggard countries. Thanks to a number of smart industrial policy interventions, Taiwan's productivity now is 18 times what it was in 1960. The country transitioned from an agrarian economy through light manufacturing to heavy and eventually high-tech industries. The successful, state-supported shift to higher-productivity sectors is not the only factor driving Asian productivity, but industrial policy is an essential part of the story.

In the GCC, by contrast, little change in productivity has appeared over the past 60 years. Some of this is due to the changing composition of economies: GCC oil sectors have very high productivity levels; thus, even if non-oil diversification pulls down average productivity, it still represents economic progress. But even within GCC non-oil economies, productivity has been largely stagnant.

EXHIBIT 1
Labor productivity trends among selected countries (1960=1)



Source: Conference Board

LESSONS LEARNED

Successful and failed industrial policies have a number of factors in common across different country cases, eras, and industries. We have distilled these into seven lessons learned, which we explore below. Importantly, these lessons concern what not to do as much as they concern what to do. Even the most successful state-led industrialization stories from East Asia also provide insights about when to withdraw the state or rely on market discipline to make new sectors truly viable.

The below review is less about specific policy tools than it is about how to use them. Industrial policy can use temporary subsidies, targeted and temporary trade protection (both tariffs and quotas), credit provision, specialized training, supply of key inputs and infrastructure, tax breaks, government support in accessing markets and technology, and regulatory requirements (e.g., requirements to achieve certain technical standards); lastly, and critically in the GCC, it can involve direct investment in productive assets (see box titled “A wide range of industrial policy tools”). More important than which tools to use, however, is under which conditions to use them.



LESSON #1

Establish early openness to competition

Lack of competition has proven to be the downfall of state-linked industry time and again. Markets, especially export markets, can provide an objective yardstick of performance for state-owned and state-supported companies. Although many other key performance indicators (KPIs)—employment, production volumes, technology content, etc.—can be influenced through state intervention, success within competitive markets is somewhat harder to manipulate. When exposed to the realities of market forces, companies must survive and thrive on their own merits.

Asian developmental states such as Taiwan, South Korea, Japan, and Singapore have systematically used international market discipline to assess the viability of newly state-supported industries. The success or failure of new chemicals, steel, automobile, and computer industries was judged on international markets, not local ones. State-supported corporations such as Samsung, Hyundai, Singapore Airlines, or Singaporean port operator PSA International became international leaders because of a clear government mandate to succeed outside their home markets, whether it was through informal guidance or explicit performance requirements.

In a closely related issue, industrial policy should avoid relying on government as the main customer for new industries, at least after a clearly defined initial ramp-up period. Price controls should similarly be avoided, as they prevent market signals from working and make it difficult to assess the actual viability of industries. Discipline from export markets is especially important if the local market in a new sector is underdeveloped and does not provide clear benchmarks for efficiency and cost competitiveness.

Without market and export discipline, state-supported industries often succumb to the temptation to build inefficient empires, especially if continued state support creates “soft budget constraints” that allow firms to generate de facto losses for years. State industry in Algeria or the government-owned industrial conglomerate Pertamina in Indonesia—which spectacularly collapsed in the mid-1970s after seven years of rapid expansion without market discipline—are examples of this pattern. Today, despite investments in heavy industry, Algeria’s total non-oil exports amount to less than 10 percent of the exports of Saudi petrochemicals giant SABIC (Saudi Basic Industries Corporation) alone. Support for Algerian industry was not linked to export success or profitability, which undermined its efficiency.

A wide range of industrial policy tools

Successful industrializers have used a wide range of policy tools, including:

- **Temporary subsidies and provision of cheap credit.**
This was notably the case with industrial banks in South Korea and Taiwan.
- **Tax breaks.**
Japan's government in the 1980s, for example, used a plethora of tax breaks and fiscal incentives, including special depreciation rules for computers, deductions for computer personnel training, and tax deferral for software revenues, to incentivize new investment in the IT sector.
- **Targeted and temporary trade protection.**
East Asian industrializers built their semiconductor and car industries by temporarily protecting the domestic market for them.
- **Use of government procurement as a temporary incentive.**
In South Korea, government gave new computer producers a leg up in the 1980s by ordering a substantial number of machines for educational use.
- **Supply of key inputs and infrastructure.**
Singapore and, more recently, the United Arab Emirates have been very effective at providing logistics infrastructure for new sectors.
- **Specialized training.**
Morocco has managed to elevate skill levels in its automotive sector by leveraging private expertise in the sector for specialized training (see box on page 30).
- **Government support in accessing markets and technology.**
When their local private sectors were still small in scale, the South Korean and Taiwanese governments leveraged commercial diplomacy and specialized government agencies to establish links with multinational companies and convinced them to share technology with local producers.
- **Regulatory requirements to improve technical standards.**
Morocco has systematically used technical standards demanded by key international investors to upgrade the production of its local automotive suppliers (see box on page 30).
- **Joint research and development with private investors.**
South Korea has used a range of government-supported research institutes to involve private firms in joint technology development.
- **Use of business associations as multipliers for industrial policy.**
South Korea cooperated with business groups like the Korean Electronics Industry Association (EIAK) in setting industrial policy targets and standards. Sector-specific export organizations were allowed to provide services such as marketing, advertising, and inspections and were empowered to provide incentives to member firms (see box on page 23).
- **Direct state investment.**
Where projects required large scale and private firms were unwilling to invest despite state incentives, governments selectively created new state-owned assets, such as steel company POSCO in South Korea or Taiwan's early shipbuilding and heavy industry firms.

Governments all around the world have used many of these tools but they have often done so much less efficiently than Asia's fast industrializers. This means that the conditions under which the tools are used are critical. In fact, many of the tools also exist and are in use in the GCC, but they are not always deployed effectively in line with the principles explored in this report.

LESSON #2

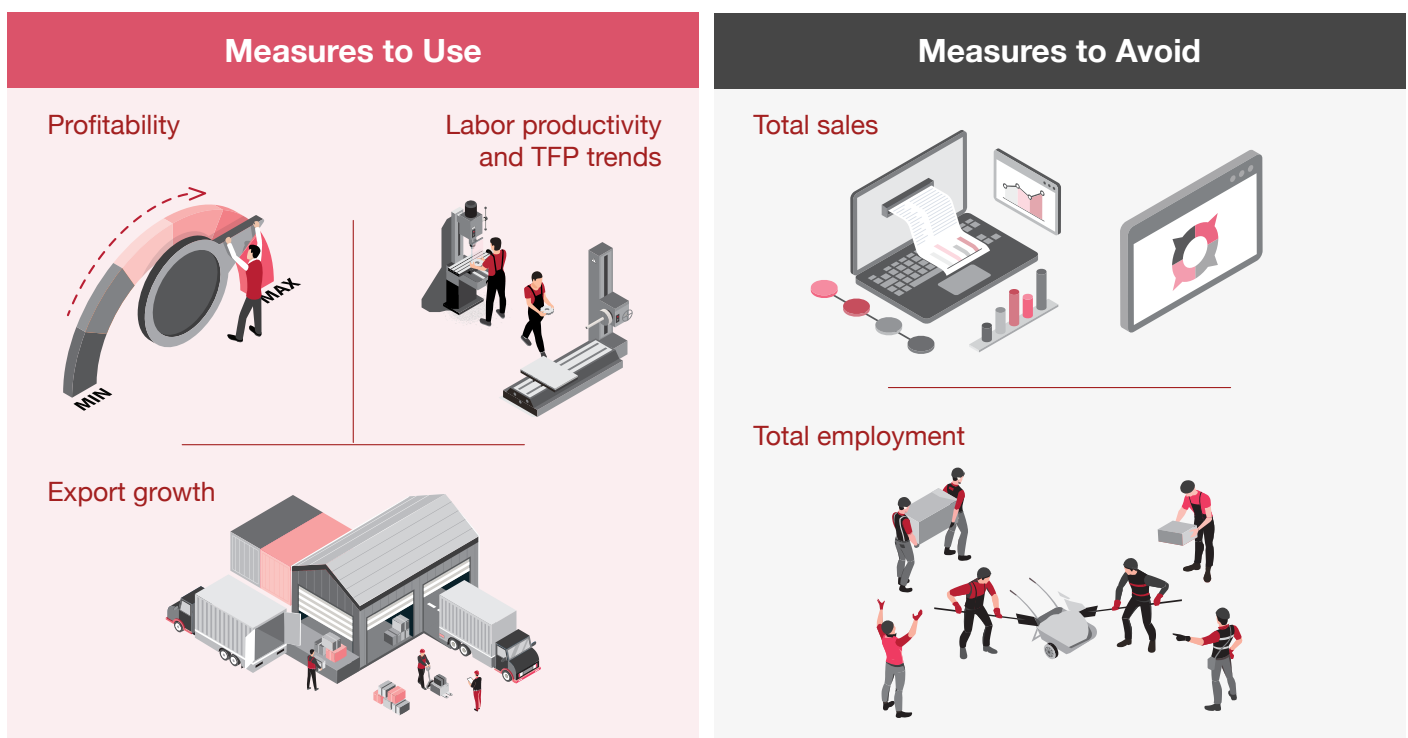
Build the capacity to measure performance

A key and widespread constraint to successful industrial policy is governments' inability even to measure whether the assets they are supporting are doing well. Governments need to be able to closely measure firms' commercial and technological performance. Historically, the most effective way of doing so has been through central, nodal development agencies such as the Economic Planning Board in South Korea or the Ministry of International Trade and Industry (MITI) in Japan.

Key measures to assess performance include success in export markets, productivity (both labor productivity and total factor productivity [TFP], which is a measure of the efficiency of overall resource use), the expansion into more technology-intensive sectors, and research and development output. Development agencies in East Asian industrializers closely monitored local production costs and benchmarked them against international prices, abandoning support policies when sectors turned out not to be viable.

Some performance indicators are better avoided because they can disincentivize efficiency and competitiveness. These notably include total employment and output, both of which encourage size over efficiency. Public sectors in Middle East and North Africa (MENA) countries in particular have historically often been used as employment machines rather than as engines of efficient production, thereby undermining the competitiveness of state-linked industry in countries such as Algeria or Egypt (see *"Useful KPIs vs. those best avoided"*).

Useful KPIs vs. those best avoided



The capability for good performance measurement and analysis is not built overnight; it needs patient capacity-building, which can take many years. Reliable reporting systems, survey and administrative data collection, and econometric capabilities require institutional discipline, interagency coordination, and specialized expertise.

The absence of centralized performance measurement has led to ailing and abandoned mega projects in many emerging markets, especially in oil-rich economies that had the resources to invest in ambitious state-financed industries. In 1962, Saudi Arabia created a state-owned hydrocarbons and industrial conglomerate called Petromin that was meant to eventually rival and perhaps supplant (the then foreign-owned) Aramco. Due to lack of market and export discipline and weak accountability to government in the absence of reliable performance data, however, Petromin suffered large cost overruns in its projects, many of which never became commercially viable. It was eventually **disbanded**, and many of its assets were taken over by Saudi Aramco (which had been taken into national ownership in the 1970s), a more efficient entity with much clearer accounting and reporting structures.

Similar stories can be told about state-supported industries in Algeria, India, or Indonesia. In Indonesia, state-owned hydrocarbons and industrial conglomerate Pertamina had six separate accounting systems in the 1970s. Therefore, no one within the organization knew either its aggregate losses or its debt levels, making effective performance measurement impossible. The firm eventually accumulated US\$10 billion of debt in 1976, more than a quarter of the country's GDP at the time.



LESSON #3

Make support conditional on performance

Measuring performance effectively is vital, but insufficient by itself. Governments also must be able to act credibly and decisively on the basis of such performance data. This means, critically, that decision-makers in government need to be willing to cut loose and, in the case of publicly owned assets, shut down underperforming firms. This is perhaps the hardest part of successful industrial policy, and many governments struggle with it. Two reasons stand out: First, they struggle because admitting errors is sometimes seen as politically costly. Second, they struggle because support policies for new industries can create new vested interests—among both the agencies providing the support and the firms receiving it.

It is all the more important to set very clear conditions under which support will be provided and withdrawn. South Korea, Taiwan, and Japan were unusually successful at this in the 1960s and 1970s. This was due to a clear and long-term industrializing mission, an export-oriented strategy that provided clear benchmarks of international market success, and high-quality performance data collection and analysis. South Korea successfully cut loose state-supported textile manufacturers—a long-standing centerpiece of the country's industrial sector—in 1973 when it turned out that they were not internationally competitive and were involved in corruption and collusion. Similarly, Japan's MITI excluded underperforming companies from repeated funding rounds in the semiconductor sector, thereby ensuring that its support would go to the most promising candidates, using the types of KPIs outlined in Lesson #2 above.

Performance criteria need to be tied to clear, preestablished time horizons, thus ensuring that industries cannot lobby for repeat extensions of support without ever becoming competitive. Any temporary trade protection and government support should be tied to such “sunset provisions.” Additionally, governments should be transparent about the fact that any forward-looking industrial policy involves a considerable degree of risk. Failure of specific ventures or sectors is a natural part of the process and needs to be acknowledged as such, rather than hidden through the repeat extension of costly but ultimately ineffective support measures.

Examples of unconditional (and thereby ineffective) industrial support policies abound across emerging economies. Saudi Arabia's Petromin in the 1960s and 1970s is, again, a good example, as it continued its government-funded expansion despite many years of losses, project delays, and failures to export industrial products on a substantial scale. But Saudi Arabia also provides an instructive counterexample: SABIC was created in 1976 under the new Ministry of Industry and Electricity, implicitly representing a new and more disciplined attempt at state-promoted heavy industrialization—this time with a clear performance mandate, lean corporate structures, and a clear export mandate from the get-go. Its development was effectively overseen by a small team in the ministry's Industrial Studies and Development Centre, and it has since become one of the world's largest chemicals companies.

Not so easy: Reward success and cut losses

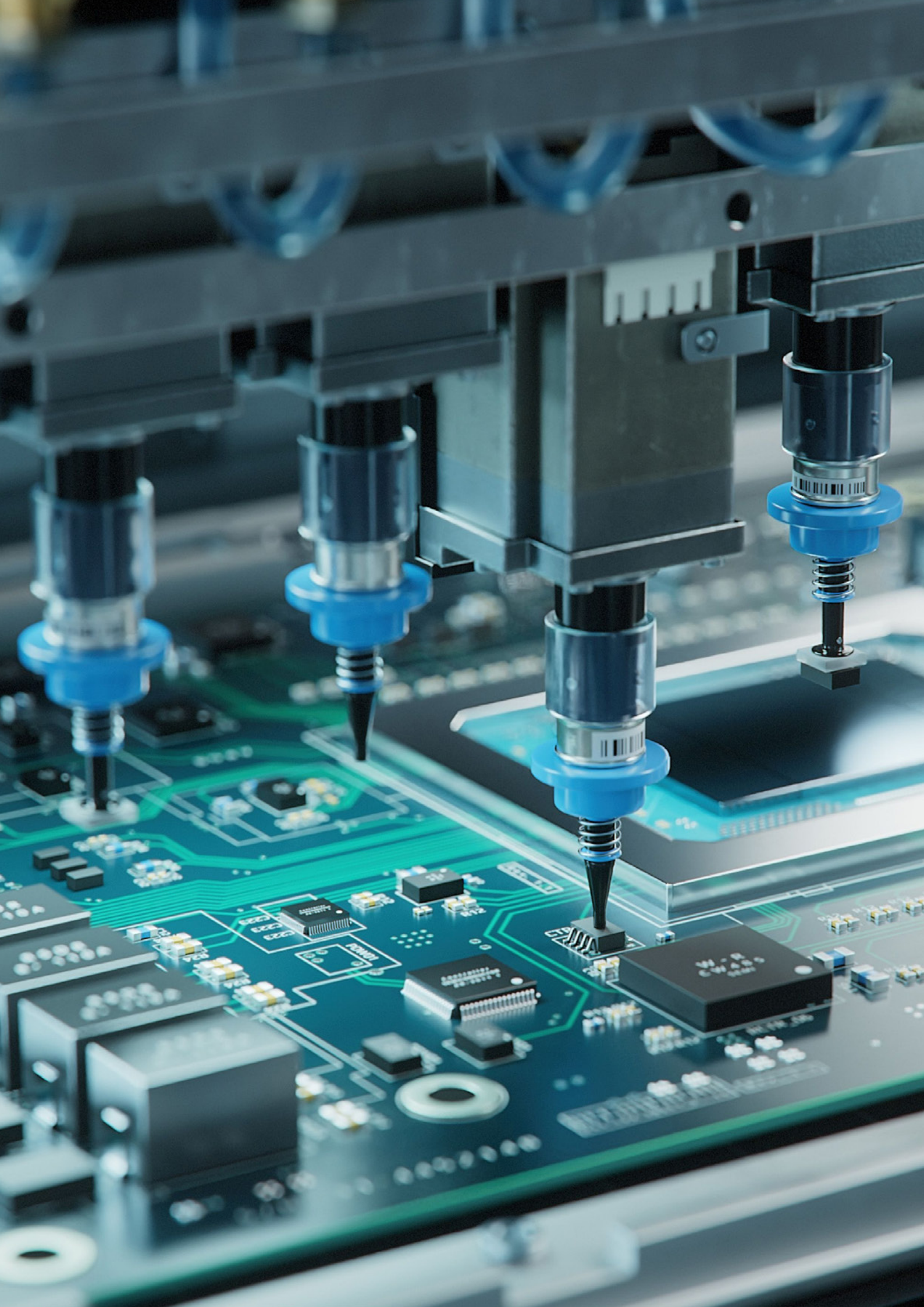
Extracting performance and dropping bad performers can be difficult both politically and bureaucratically: It involves difficult conversations and tough decisions. It can be particularly tricky in consensus-oriented administrative and business environments such as those in the GCC. There are, however, several principles that can make it easier and relatively less costly.

First, it is easier to cut losses when ventures are scalable. Some ventures, e.g., in semiconductor manufacturing or shipbuilding, are inherently scale-dependent. Yet in many other sectors, production can be scaled up gradually. This means that even if project announcements are big, in practice, investments can be made incrementally. This allows early performance measurement and, if necessary, early abandonment or adjustment of ventures with limited losses. Dubai's industrial strategy has been particularly masterful at this: Many of its free zones, real estate projects, and logistics hubs have been designed to be viable (and to host private tenants) even in an initial, small-scale rollout phase—and even when, as in the case of Dubai World Central airport, they are announced as world-scale ventures. These scalable ventures contrast with some of the other GCC mega projects of the 2000s such as Masdar City, Al-Lulu Island, or Palm Jebel Ali, which were planned on a large scale to start with, resulting in higher costs when they failed or struggled.

Secondly, and closely related, extracting performance and dropping underperformers is easier when economic development encourages wide-ranging, small- to mid-scale experimentation with new business models rather than making a few very large bets. Wider experimentation allows constant adjustment and discovery of new business models. Given the typically great uncertainty about whether even the best-planned new ventures are commercially viable, this approach is crucial. Wide-ranging experimentation provides more information about the viability of new sectors and products at lower cost. There are numerous examples of unexpected successes emerging from smaller-scale support policies, be they salmon farming in Chile, orchid greenhouses in Taiwan, or football production in Pakistan.

The GCC has undertaken many positive steps in building up state-supported venture capital as well as credit, training, and technology support for small and medium-sized enterprises that allow investment in scalable business models and lower-risk experimentation. Yet it is not clear that the efficacy of these programs is always measured reliably; neither is it evident that there is strict and effective performance measurement and accountability.

It is often difficult for government and sovereign wealth funds to pick winners *ex ante*, i.e., before investments are undertaken. It is hard enough to identify what the sectors of tomorrow will be in the GCC, and it is even harder to identify individual projects or products that will thrive. What governments and funds can do, however, is support many new ventures in parallel. This positions them to stop supporting those that don't work out, while helping the viable ones scale up. Mistakes will happen in industrial policy—no country ever got all of its bets right. Minimizing the cost and ensuring the reversibility of such mistakes is therefore key (see “Not so easy”).



LESSON #4

Set consistent and narrow priorities for industrialization

One factor that can make it especially hard to extract performance is confusion over the objectives of industrial policy. Governments, and different agencies within them, often want many things at once. They wish for diversification and export success, but other objectives include employment (in the GCC context, typically citizen employment), regional development, supply chain security, and the provision of cheap goods for consumers. In the case of investments in media, tourism, sports, and entertainment, there is an aim to achieve the “soft power” that accompanies prestige on the international stage. Each of these aims may well have intrinsic value.

However, ambiguous priorities can undermine target-setting and accountability, especially when different senior players within government have different aims or when leadership priorities shift over time. This tends to produce an environment in which none of the objectives get accomplished. Clarity is critical—governments must clearly define the hierarchy of objectives in their industrial policies and stick to it. As a general rule, state-led industrialization is easiest to do if the core objective is diversification and profitability. This should be the only long-term objective for many (if not most) industrial policy projects. If there are noncommercial objectives specific to certain sectors (e.g., supply chain security or local provision of strategic goods), governments still need to define minimal commercial targets.

There are ways to resolve target conflicts explicitly, for example, by quantifying the cost of providing particular noncommercial public goods and providing targeted subsidies accordingly, potentially under a “least subsidy” tender competition in which private bidders requesting the lowest state subsidy are chosen to provide these goods. But this should be done only selectively, when there is a compelling noncommercial rationale, and not across the board for all sectors.

The singular focus of East Asia’s industrializers on commercially viable export expansion provides a compelling case study of coherent priority-setting. Consider South Korea, which has experienced one of the largest economic transformations of the past 60 years, starting from an agriculture-based economy and shifting to become one of the top world exporters as its government prioritized productivity and export success over other objectives. Over time, good jobs for citizens followed: Export leader Samsung alone has a quarter of a million employees today.

In many other countries, target conflicts doomed new and evolving sectors, especially when employment was prioritized over efficiency. In the Middle East, Algerian and Egyptian state-owned industry was forced to not only provide subsidized products to consumers but also take on excess employment, resulting in chronic losses. In 2021 [Tunisair](#), which is primarily state-owned, had a fleet of 26 aircraft, of which only seven were operational. At that time the airline employed 7,600 individuals—more than 1,000 per functioning plane. Similar numbers applied to Kuwait Air in the 2010s. The social employment mission of these companies clearly doomed their commercial prospects.

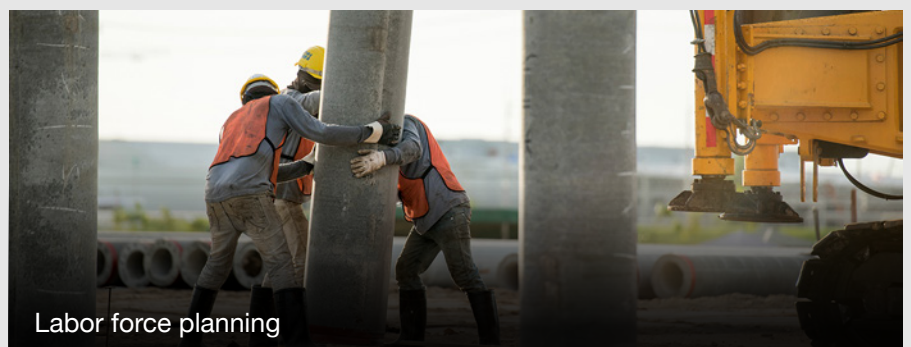
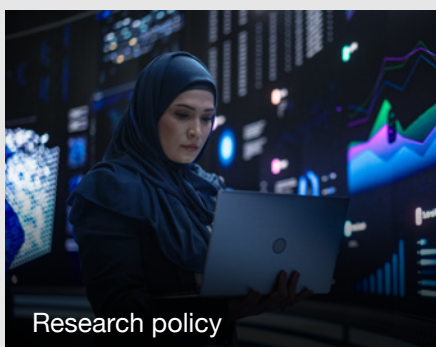
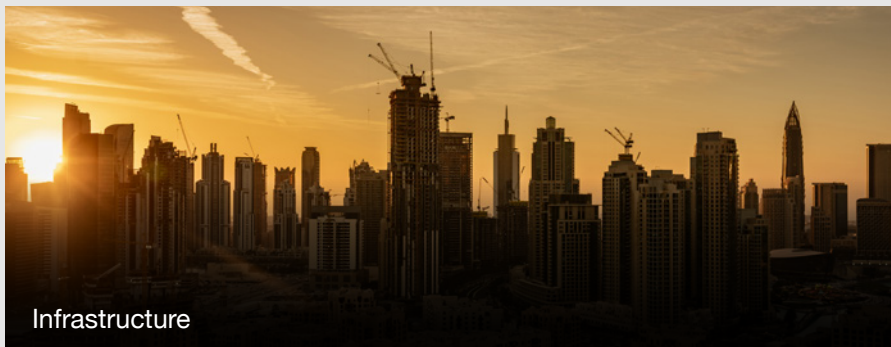
Although citizen employment is a worthwhile objective for inclusive development, it is better addressed through separate and more general labor policies (such as skills formation policies, wage supplements, and migration policies) than through being built directly and coercively into industrial policy. It cannot be the immediate priority in early stages when government experiments with the viability of new sectors.

LESSON #5

Use high-capacity “lead agencies”

One factor that can help coherent target-setting is the creation or empowerment of a central lead agency in charge of industrial policy. Industrial policy is naturally cross-cutting, involving such policy areas as infrastructure, finance, trade policy, regulation and licensing, education and training, research policy, and labor force planning. Coordination across these diverse fields is difficult under the best of circumstances. It can be especially challenging in GCC governments and public sectors that have grown rapidly in recent decades; these organizations are often characterized by vertical lines of communication and sometimes struggle with horizontal policy coordination.

Major areas of industrial policy



The main approach to coordinating industrial policy in East Asian industrializers has been a reliance on lead agencies as key nodes of policy accountability and coordination. These lead agencies are tasked with setting clear, consistent policy priorities that are binding for the rest of government. The consistency of such priorities has at times been a challenge in the GCC context, where trade-offs between productivity and foreign direct investment (FDI) attraction on the one hand and local content and national employment on the other are often addressed differently by various parts of government, and where sectoral priorities can shift.

The duties of lead agencies can be put into four categories:

1

Coordinate priorities. Lead agencies coordinate priorities across government, thereby avoiding siloed structures for trade policies, tax and subsidy policies, licensing and standards policies, etc.

2

Measure and analyze performance. Lead agencies measure and analyze performance outcomes among firms (see Lesson #2), sometimes in partnership with universities and research institutes.

3

Maintain accountability. Lead agencies hold other government agencies and firms accountable for performance. It is much easier to impose performance requirements if there is one focal point in government doing so.

4

Coordinate investment and policy dialogue. By coordinating state investment and state–business policy dialogue, lead agencies minimize duplication of policies and projects and ensure complementarity across sectors (see Lesson #6 below for models of state–business coordination).

Lead agencies are characterized by competitive recruitment and career structures, usually outside the regular bureaucracy. They are relatively small, can move fast, and enjoy a clear mandate by the leadership to coordinate and lead policies across different administrative fields. They are able to convene and, if necessary, strong-arm other line agencies. Leading historical examples include South Korea's Economic Planning Board (EPB), Japan's MITI, and the Prime Minister's Office in Singapore (see text box on next page). MITI is so legendary in Japanese popular culture that a whole soap opera has been dedicated to the historical feats of Japan's industrial bureaucrats—an unusual outcome in the history of the world's public servants.

An empowered lead agency can also help with decluttering responsibilities on lower levels of the government apparatus, reducing overlapping responsibilities, and consolidating jurisdictions and government organizations. A central body with deep research, planning, and coordination capacity can also help limit the creation of ever more inter-ministerial coordination committees—and empower the remaining committees to make swift and well-informed decisions.



South Korea's Economic Planning Board

Aside from Japan's MITI, South Korea's Economic Planning Board (EPB) is probably the best-known historical case of a powerful lead agency. After South Korean economic policy suffered from inter-ministerial rivalries and lack of policy coordination (as well as a good amount of corruption) in the 1950s, the new government under authoritarian president Park Chung Hee created an inter-ministerial council for reorganizing government in the early 1960s. The council helped bureaucratic reformers build a coalition in favor of policy centralization and proposed the creation of a "super ministry," which would become the Economic Planning Board.

The EPB's key innovation was to combine planning powers with some degree of control over the budget, which helped give its economic plans teeth. The new body incorporated budget, statistics and research, and planning units from the Ministry of Finance, the Ministry of Home Affairs, and the Ministry of Reconstruction. Its internal Bureau of Budget prepared broad guidelines for the annual state budget, collected annual proposals from other ministries, and evaluated those proposals' feasibility. It also played a central role in guiding credit allocation by state banks and funds. It could initiate specific projects and ask other ministries to spell out their budgetary implications.

In 1963, the EPB's special status within the cabinet was further cemented when its minister was also given the title of deputy prime minister, which entailed a mandate to coordinate and lead the work of other economy-focused ministries, all of which were required to consult with the EPB on their own plans. The EPB had a very close relationship with the presidential office, providing regular, sometimes daily briefings on economic issues to the leadership.

Its central role and prestige allowed the EPB to recruit high-powered technocratic staff, giving it unrivaled statistical and analytical capabilities. The process was helped by President Park's broader reforms to the civil service, which ended patronage employment in core economic agencies, installed new performance rating and training systems, and improved and deepened the government's reliance on South Korea's prestigious civil service exam system.

Much of the EPB's history (see "South Korea's Economic Planning Board") is case-specific, and not all of its details can be directly copied by other governments. It was created at a time when the local private sector was weak and when the international context allowed particularly tight state control over the economy. And although any industrial policy lead agency should have an important voice in the budgeting process, the EPB's high degree of control over the state budget was also unusual. All that said, the EPB case study highlights the need for a central clearing board that allows priority-setting in industrial policy and that is buttressed by deep in-house analytical capacity.

LESSON #6

Crowd in the private sector as soon as possible

Although the new age of industrial policy provides a renewed role for the state, competition and markets remain key long-term drivers of investment and prosperity. Industrial policy generally helps private capital rather than displacing it. Even in state-heavy emerging economies such as China, very few sectors are entirely state-dominated, and the most innovative ones tend to be privately owned.

Direct ownership and state investment in the economy are located at the most interventionist end of state-led industrial policy. They are unusually important in the GCC context, where state holdings and state-owned enterprises have been playing a key role in diversification. Yet Asian success stories, as well as the GCC's own economic history, show that state-only investment in productive assets should happen only under strict conditions.

First, government should always investigate whether a projected new sector can be developed by private investors, whether local or foreign. This will often require temporary incentives and guarantees, but so do many state-owned investments, which likewise enjoy access to cheap capital as well as to government decision-makers and publicly provided infrastructure. The lack of private investor appetite to move into new sectors under normal market conditions should not be mistaken for a reluctance or inability to do so if the right conditions are provided in a credible, long-term fashion.

Consider another historical example: In South Korea and Japan, large private groups (South Korean “chaebols” and Japanese “keiretsus”) led the post—World War II diversification and industrial deepening drive, despite their lack of experience in new sectors and their limited capital resources in the wake of global war. They enjoyed access to state-provided capital and a variety of incentives and temporary trade protection, and they coordinated closely with the government's lead agencies.



With the exception of assets that have a social mandate or particular security function, state ownership usually should be temporary, either privatizing once an asset is successful or closing it down if it is not.”

A government or state fund can take direct equity in productive assets in cases where private investors are demonstrably unwilling to invest despite clear incentive structures (although this reluctance needs to be taken as a serious sign that a given venture might be unusually risky). In such cases, there needs to be a clear exit strategy leading toward privatization of productive assets once they are up and running, based on a clear and public time line. As their economies matured, even countries with a pronounced role of state-owned enterprises (SOEs) in development, such as Taiwan and Singapore, embarked on wide-ranging privatization drives in the 1980s and 1990s. These involved banks, telecommunications providers, steel and petrochemicals plants, property and infrastructure assets, and shipping companies.

With the exception of assets that have a social mandate or particular security function, state ownership usually should be temporary, either privatizing that asset once it is successful or closing it down if it is not. Governments must be ready to abandon or downsize projects if crowding in of private investors—i.e., complementary investment by private players—is not possible fairly early on, at least in the shape of minority private co-ownership. Lack of early private involvement and the resulting lack of market discipline has led to many white elephants in resource-rich countries, be it the **Skolkovo** tech and research city in Russia, Kazakhstan's stalled light railway project, or Abu Dhabi's initial iteration of zero-emissions Masdar City. (Notably, parent organization Masdar has since become a much more successful renewables company, often joining with private partners and competing in export markets.)

Industrial policy will be successful in the long run only if there is buy-in from private investors. In the GCC, investors sometimes fear that government priorities could shift in the future—or even that government-owned firms will directly compete with them, reducing their take-up of available incentives. Buy-in from private capital requires making the private sector a genuine partner in policymaking to ensure government strategy takes private-sector capabilities into account and provides a predictable policy environment. This implies not occasional consultation, but rather institutionalized coordination of policy—such as through a state-business council with senior business representatives attached to the cabinet that can produce binding, long-term policy agreements.

Lead agencies such as Japan's MITI or South Korea's EPB both had close links to the private sector, allowing regular information exchange and the building of long-term trust. This enabled private investors to move into new, higher-risk sectors on the basis of credible, long-term guarantees of support and policy stability. In South Korea, the Export Promotion Subcommittee comprised a series of private–public task forces examining problems of finance and taxation, sectoral issues, marketing, information, quality improvement, and technical assistance, directly informing South Korean export policies. By contrast, interviews and survey data from the GCC indicate that private investors do not always feel that they have a similar seat at the table, and suggest that fear of sudden policy changes impedes their ability to make long-term investments in new sectors.

In some East Asian cases, state–business cooperation was so close that business associations even took on industrial policy tasks. In South Korea, sectoral export organizations under the Korean Traders Association provided services such as marketing, advertising, inspection, and arbitration. They supplied relevant data to government; government in turn allowed them to allocate incentives among member firms. East Asian consultation structures were to some extent informal, and are thus hard to replicate directly, but there are more institutionalized models of peak-level coordination from other successful diversifiers such as the National Economic and Social Council in Ireland.

Involving the private sector more closely in industrial policy allows government to improve policy design, mobilize more capital, trigger innovation, and introduce market discipline in new sectors early on. In cases in which government still finds itself owning and operating assets, it needs to create a regulatory framework that guarantees “competitive neutrality” regarding access to subsidies, barriers to market entry, access to credit, market protection, and so on. Gulf SOEs are occasionally exempted from competition regulations and enjoy access to state resources in a way that private competitors do not, potentially distorting competition. In some cases, government funds have started taking equity stakes in private firms even in mature sectors, raising concerns over how level the playing field will be for private competitors in these areas. The Organisation for Economic Co-operation and Development (OECD) provides detailed, practical guidelines and case studies on how to ensure fair competition and govern SOEs in the least distortionary fashion.



LESSON #7

Move up value chains systematically

The endpoint of successful diversification is to reach the global technology frontier—generating high levels of self-sustaining innovation in growth sectors and attaining the productivity levels of the most advanced countries. But getting there requires strategic patience; leapfrogging into new high-tech sectors without having done the necessary groundwork usually goes wrong. This means that industrial policy should build on existing endowments, skills, and infrastructure to diversify into adjacent sectors and systematically move up value chains.

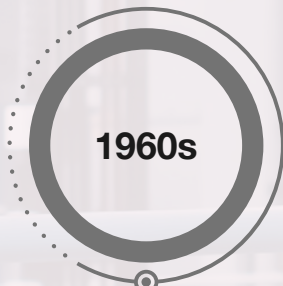
When governments want to expand into entirely new areas, they first need to nurture adjacent industries and skills, attract foreign owners of technology, and encourage the formation of local industrial clusters in private industry that can serve the new sectors. East Asian industrializers did not jump into high-tech manufacturing right away. Rather, they patiently moved up value chains after World War II, gradually accumulating the required physical and human capital for high-tech production (see *“How East Asian industrializers climbed up the value chain”*).

The same logic of focusing on basics first applies within sectors. South Korea’s development of its semiconductor sector from the 1960s on and Morocco’s more recent development of an automotive industry are great examples for such strategic patience (see both *“Leapfrogs that worked”* boxes).

In contrast, isolated leapfrogging or moonshot attempts without a local base to build on are likely to fail. Historically, this was the case with attempts to build domestic automobile sectors in countries with limited industrial bases, such as Algeria or Iran, and with GCC attempts to build local semiconductor manufacturing facilities without a wider regional track record in the production of electronics and related inputs. GCC countries now have opportunities to develop entirely new sectors such as advanced pharmaceuticals, green hydrogen, or electric vehicle manufacturing. The region has a new chance to get it right by first nurturing relevant supplier networks, building up advanced skills and training systems in cooperation with foreign partners, and leveraging international expertise for setting product standards. A systematic investigation of which parts of a supply chain can first and most easily be built locally should stand at the beginning of any moonshot effort.

How East Asian industrializers climbed up the value chain

East Asian states guided the move up the value chain after WWII:



1960s

Light manufacturing based on cheap labor—textiles, wood products



1970s

Heavy manufacturing based on large capital investment—steel, petrochemicals, shipbuilding



**1980s
and after**

High-tech manufacturing based on R&D—electronics, automotive

Leapfrogs that worked: South Korean semiconductors and computers

Many international economists in the 1950s and 1960s were skeptical about South Korea's ambitions to move into heavy industry and, subsequently, high-tech and computer industries. South Korea in 1960 was a poor, agrarian country with a limited industrial history, trying to compete with advanced economies like the U.S. or the U.K., which had started to build their industrial infrastructure more than a century earlier.

And yet South Korea pulled off several successful “moonshots.” The most impressive of these is perhaps its move into semiconductor manufacturing, an area previously dominated by U.S. producers in which it managed to become a world leader by the 1980s. But the success story is one of long-term planning and gradual moves up the value chain—not a one-off leapfrog into the most recent technologies. As early as the 1960s, the South Korean government under President Park Chung Hee encouraged FDI in basic semiconductor production through a variety of government incentives. In the 1970s, once simple industrial structures were in place, it pushed for local companies to acquire foreign technologies and invested in R&D and training. Korean bureaucrats and diplomats assisted Korean companies to negotiate technology transfer with foreign partners.

The government simultaneously built up the capacities of a number of state-supported research institutions such as the Korea Institute for Industrial Economics and Trade (KIET), the Electronics and Telecommunications Research Institute (ETRI), and the Korea Institute of Science and Technology (KIST), which developed close links to Silicon Valley. Local private firms were closely involved with joint research. ETRI in particular gave development loans to private firms in accordance with their technological performance.

As a result of this patient institution-and capacity-building, Korean producers were able to upgrade their output from simple semiconductors to D-RAM chips to complex telecom switching systems in the 1980s. Korean chaebols became world leaders in semiconductor and telecom technology from the 1980s on, leading R&D efforts by themselves and allowing the state to step back. From a country with no high-tech capacity to speak of, South Korea had transformed itself into a global technology leader. Not in one leap, but rather through a methodical climb up the value chain that required more than two decades of patient groundwork, building capacity and networks across government, research institutes, private firms, and foreign partners, and moving into new product segments when the local ecosystem was ready.

Leapfrogs that worked: Automotive in Morocco

In the early 2000s, Morocco seemed like an inauspicious place to build an automotive industry: a country with a weak industrial basis, limited infrastructure, and no strong traditions of vocational training. International observers were skeptical about its ambitions to become part of global automotive value chains given the harsh competition it would face from Eastern Europe, from Asia, and (within the MENA region) from Turkey. And yet Morocco managed to become the Arab world's only major automotive producer over the next two decades; the sector now exports more than \$10 billion of goods per year.

As in the case of South Korean semiconductors, a stable, long-term government commitment was key to this outcome. The Ministry of Industry in particular acted as lead agency and initially focused on feasible, and commercially viable, short- to medium-term targets without losing sight of its long-term ambitions. The Moroccan automotive push started with lower-tech production of relatively simple, labor-intensive components, yet all were organized around suppliers and clusters that would subsequently be able to serve higher value-added production. At the same time, government built the logistics and transport infrastructure that would allow the country to become part of fast-moving European value chains.

Given the weak technological basis among local firms, the Ministry of Industry leveraged foreign investors, notably Renault, to improve local supplier standards and to coordinate publicly owned but privately operated vocational training. It thereby simultaneously improved production quality and improved the local skills basis. Sectoral policies were often co-designed by public and private stakeholders, drawing on the Moroccan Association for Automotive Industry and Trade as a key interlocutor to negotiate credible policy deals.

Local private firms, eager to capture increasing parts of the automotive value chain, signed performance contracts with the Ministry of Industry and were able to gradually move into higher-value-added supplier activities. Although the Moroccan auto industry remains a work in progress and is not yet a source of product innovation, it has come a long way during the last two decades. Morocco is another case that demonstrates how successful leaps into new sectors in practice consist of many well-coordinated baby steps.

KEY TAKEAWAYS

GCC states have a unique opportunity to drive economic diversification: A newfound international tolerance for industrial policy and trends of partial deglobalization provide new opportunities to deploy industrial policy and become involved in global supply chain diversification. The GCC enjoys a fortuitous geographic position and, importantly, a generous factor endowment in terms of deep pools of capital and cheap energy, whether fossil or renewable. Its governments are also willing to make long-term bets in a way many other governments around the world with shorter time horizons are not.

Yet the history of industrial policy shows that much can go wrong even when many of the ingredients are right—especially in resource-rich countries where large resources allow ambitious investment programs, but also sometimes dilute market discipline and prolong unsuccessful experiments. Only a handful of countries in the world are true cases of successful state-driven industrialization and diversification. It is all the more important to heed their lessons, which this report has distilled into seven core insights:





Early openness to competition—especially on international markets—is a key, necessary device to ensure the efficiency and commercial viability of state-supported projects and sectors. In the GCC, this implies, among other things, setting clear and public targets for success in international markets and among non-government customers.



Governments need to **build advanced capacity to measure performance**, using commercially robust KPIs that reflect competitiveness rather than just the scale of a sector's or project's activity. GCC governments should deepen the data-gathering and analysis capability in central agencies and use profits, productivity, and export success as primary KPIs.



Governments need to **make industrial policy support conditional on performance** and cut their losses when needed. This is more easily done when ventures are scalable and when industrial policy involves wide-ranging experimentation rather than a few very large, high-stakes bets. GCC governments need to stage-gate their industrial policy projects and be willing to cut their losses when objectives are not reached. This requires off-ramp strategies for winding down underperforming projects and initiatives and the prioritization of scalable ventures.



Governments need to **be clear and consistent about their industrial policy priorities**, and the list of priorities should be short. GCC economic planners should review target conflicts where they are at play—notably between profitability and national employment—and resolve these transparently and permanently.



High-powered lead agencies can ensure the coordination, coherence, and credibility of industrial policy. GCC governments should **create or boost economic lead agencies**, using advanced recruitment tools and incentives to attract top potentials, and consolidate the institutional landscape around these agencies to minimize organizational overlaps and conflicts.



Private investors need to be crowded in as soon as possible to leverage private capital, innovation capacity, and market discipline. When governments invest directly, special care needs to be taken that this investment does not tilt the playing field against private competitors. GCC economic planners should review their major initiatives with a view to facilitating private-sector participation through the same incentives and guarantees implicitly enjoyed by public entities. They should also adopt more explicit competitive neutrality policies to ensure fair competition between public and private firms.



Countries need to **move up value chains systematically**. They should try moonshots only if there is a plan to build all the ingredients necessary. GCC planners should review their current moonshot strategies to ensure that the required industrial clusters and suppliers exist or can be attracted and that the local skill basis is provided. Where possible, initiatives should be broken down into individual stages (of increasing technological complexity) that are each commercially viable on their own.

CONCLUSION

GCC industrial policy has great long-term opportunities, but they require strategic patience. Sometimes less—but better designed—policy is more. By finding the appropriate path to engage the resource-rich GCC countries' contextual advantages while dodging known pitfalls that have resulted in struggles and failure in other parts of the world, leaders in both government and industry can realize remarkable potential.

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