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# Economic Diversification

*The Road to  
Sustainable Development*

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# ECONOMIC DIVERSIFI- CATION

## *The Road to Sustainable Development*

A strong, growing, sustainable economy is the goal of every nation in the world. A sustainable economy enhances a nation's standard of living by creating wealth and jobs, encouraging the development of new knowledge and technology, and helping to ensure a stable political climate. Having a diverse economy—that is, one based on a wide range of profitable sectors, not just a few—has long been thought to play a key role in a sustainable economy. Recent research by Booz & Company confirms that is indeed the case. There is a link between economic diversity and sustainability, and economic diversification can reduce a nation's economic volatility and increase its real activity performance. Furthermore, there are metrics that policymakers can use to measure these key economic dimensions and ways that they can promote their nation's long-term economic health and stability.

### **Studying Sustainable Development: Can Diversification Drive Sustainability?**

This study grew out of Booz & Company's work helping Middle Eastern governments, particularly those in the Gulf Cooperation Council (GCC), formulate their economic development strategies and transformation agendas—that is, their “transformations” from economies based on a single commodity to robust, well-diversified ones. These countries, rich in hydrocarbons and with economies heavily invested in oil and gas, face a particularly daunting challenge in diversifying; consequently, it was important to determine just how critical economic diversity was to their creation of sustainable economies.

To answer that question, we broadened our focus beyond the Middle East region and scrutinized 19 different countries around the world with varying levels of economic maturity to assess their economic

diversification, volatility, and health.<sup>1</sup> We studied the following:

- GCC economies, consisting of Bahrain, Kuwait, Oman, Qatar, the Kingdom of Saudi Arabia (KSA), and the United Arab Emirates (UAE)
- Group of Seven (G7) economies, consisting of Canada, France, Germany, Italy, Japan, the United Kingdom, and the United States
- Transformation economies, consisting of Hong Kong, Ireland, New Zealand, Norway, Singapore, and South Korea (these economies initiated or completed transformation to an industrialized nation sometime in the second half of the 20th century).

Our analysis identified a clear link between economic diversification and sustainable growth. It also showed how diversification can reduce a nation's economic volatility and increase its real activity performance. These findings provide a firm reminder to policymakers worldwide that one key to building a strong, sustainable economy is building a diversified economy—one that is not overly dependent on a single commodity and that has a strong external as well as internal focus.

## Evaluating Economic Diversification

Our initial analysis of economic diversification across the GCC, G7, and transformation economies produced three key findings.

*Gross Domestic Product (GDP) Should Be Distributed Across Sectors.* To begin, we assessed the economic concentration and diversification of the GCC, G7, and transformation economies in the study. We wanted to find out whether their GDPs were evenly distributed across a wide variety of economic sectors—or whether they relied heavily on just one or two sectors.

We measured diversification by evaluating the distribution of a nation's GDP across its various economic sectors, such as agriculture or manufacturing, to determine a “concentration ratio” and a “diversification quotient.” The concentration ratio measures a nation's concentration in a given sector by taking the sum of squares of percent contribution to GDP. The diversification quotient is the inverse of the concentration ratio; it provides a metric that policymakers can use to gauge their nation's economic diversity. Essentially, the lower the concentration ratio and the higher the diversification quotient, the more diversified a nation's economy.

The results of our analysis showed that the level of diversification varied widely across the three studied categories, with the GCC countries having the highest concentrations in terms of sector contribution to GDP and thus the lowest diversification quotients (see Exhibit 1). The level of concentration for the G7 countries,

for example, was 16 percent; for the GCC countries, 26 percent. The diversification quotient for the G7 countries was 6.07; for the GCC countries, 3.87.

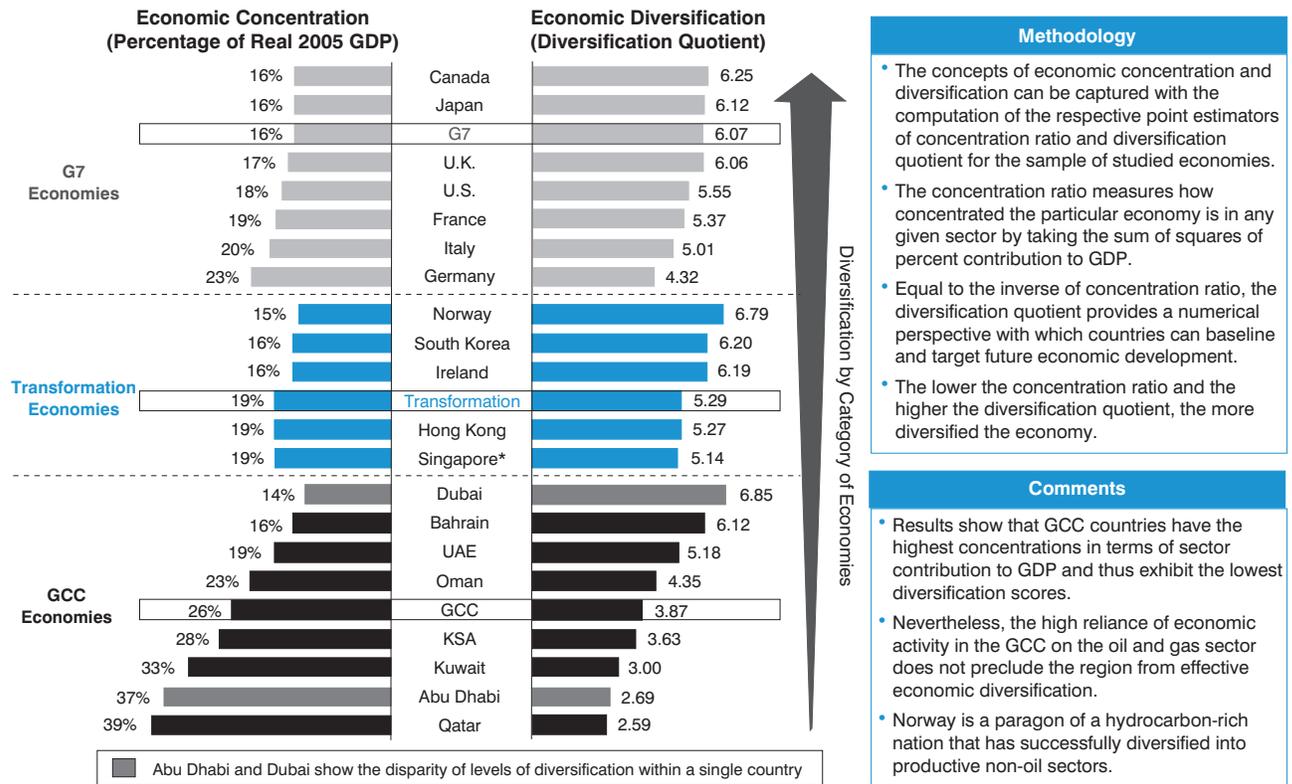
These findings were not necessarily surprising. Historically, the economies of GCC countries have been dominated by the oil and gas sector, and although the relative contributions of the GCC countries' various economic sectors to GDP have shifted noticeably over the years, the oil and gas sector has consistently represented the largest share in these nations' GDPs (Exhibit 2, see page 4). Moreover, registered growth in non-oil sectors, such as manufacturing and hospitality, generally has reflected not organic growth in those industries but, rather, spillover effects from increased oil receipts and subsequent record-high inflows of capital. Needless to say, such types of growth cannot be considered inherently sustainable, because they depend heavily on the dominant sector's fortunes in the marketplace—a paradigm that most nations would want to avoid.

A key conclusion that can be drawn from this ongoing trend toward concentration is that the GCC countries' non-oil sectors have not fully matured and still have pervasive structural gaps, such as inefficiencies in labor, capital, and knowledge and technology. In addition, this trend suggests that revenues from oil and gas are not being reinvested effectively in GCC

<sup>1</sup> Data for this study were obtained from the UAE Ministry of Economy, Central Bank of the UAE, Saudi Arabia Ministry of Economy and Planning, Saudi Arabian Monetary Agency (SAMA), Central Bank of Kuwait, Oman Ministry of National Economy, Central Bank of Bahrain, Qatar Planning Council, International Monetary Fund (IMF) World Economic Outlook 2006, Organisation for Economic Co-operation and Development (OECD), World Development Indicators (WDI), Economist Intelligence Unit (EIU), International Labour Organization, Abu Dhabi and Dubai statistical yearbooks, official statistics bureaus of the sampled economies, and Booz Allen Hamilton analysis. Some countries are excluded from one or more exhibits due to the lack of available data.

**Exhibit 1**

*Economic Concentration and Diversification in the GCC, G7, and Transformation Economies, 2005*



Note: The aggregate scores for the G7, transformation, and GCC economies were calculated based on the total GDP breakdown for those economies, not on the average or median score for the individual constituents.  
 \*As a result of Singapore's focused economic development strategies, the economy has become somewhat concentrated in two sectors: trade and manufacturing.  
 Sources: UAE Ministry of Economy; SAMA; Central Bank of Kuwait; Oman Ministry of National Economy; Central Bank of Bahrain; Qatar Planning Council; IMF World Economic Outlook 2006; OECD; Abu Dhabi and Dubai statistical yearbooks; official statistics bureaus of sampled economies; Booz & Company

countries. Instead, excess liquidity is being used to fund nations' internal (i.e., local) economies, rather than external economies—that is, those sectors that contribute significantly to a nation's net export of goods and services. This is a difficult pattern to break; Russia, for example, despite being consumption-gearred, recently announced that it would begin investing more of its oil and gas revenues in infrastructure projects such as power and transportation, hoping to create an infrastructure that can better support growing businesses across all of its

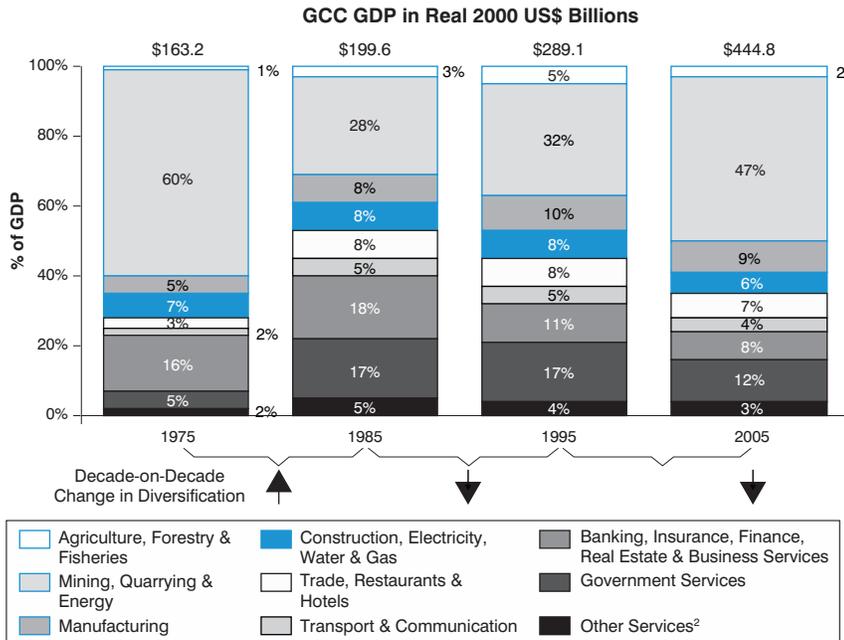
territories beyond Moscow and St. Petersburg and that can enable development of outbound industries.

Although some investment in internal economies is necessary, having an economy with a strong foundation in export helps to insulate a country against the vagaries of its domestic economy. In the case of hydrocarbon-rich countries, it also insulates them from the volatility of oil and gas prices and that volatility's trickle-down effect on the economy.

**Concentration Is Not Inevitable in Hydrocarbon-Rich Economies.** Historically, the bulk of the GCC region's economy has been very susceptible to such changes in oil prices, especially so in the larger economies of KSA, Kuwait, Qatar, and the UAE. For example:

- Since 1975, KSA's overall GDP growth has been driven mainly by growth in the oil and gas sector—and that growth has varied dramatically over the years, from negative 22 percent in the early 1980s to 10 percent in 2005, largely

**Exhibit 2**  
**GDP Breakdown by Economic Sector in the GCC, 1975–2005<sup>1</sup>**



<sup>1</sup> GCC figures are based on a constructed sample of GCC GDP series, subject to data availability.  
<sup>2</sup> Other Services include community, social, and personal services; activities of private households as employers; and undifferentiated activities of private households, as well as extraterritorial organizations and bodies.  
 Sources: UAE Ministry of Economy; SAMA; Central Bank of Kuwait; Oman Ministry of National Economy; Central Bank of Bahrain; Qatar Planning Council; Booz & Company

as a result of oil price changes and shocks. The growth in non-oil sectors has varied less noticeably but nonetheless has fluctuated and has been influenced by changes in oil prices. This suggests possible “contagion effects”—that is, the tendency of failure in one economic or financial arena to spill over into other, unrelated or tangentially related arenas.

- Kuwait, Qatar, and the UAE display sector distribution and growth patterns comparable to those of KSA over the same period. The UAE’s GDP growth has been driven mainly by the oil and gas sector; effective growth of that sector has varied from double-digit

negative to double-digit positive growth rates; and growth of non-oil sectors appears to have been affected by changes in oil prices.

- However, the UAE has recently experienced some relative improvement in its non-oil sectors, largely as a result of Dubai’s efforts toward economic diversification, such as the development of the Jebel Ali port and harbor, various “free zones” (i.e., enterprise zones) throughout the city, and extensive real estate complexes catering to the travel and tourism industry. In 2005, only 5 percent of Dubai’s GDP came from the oil and gas sector—a strong testament to the results that can come from a

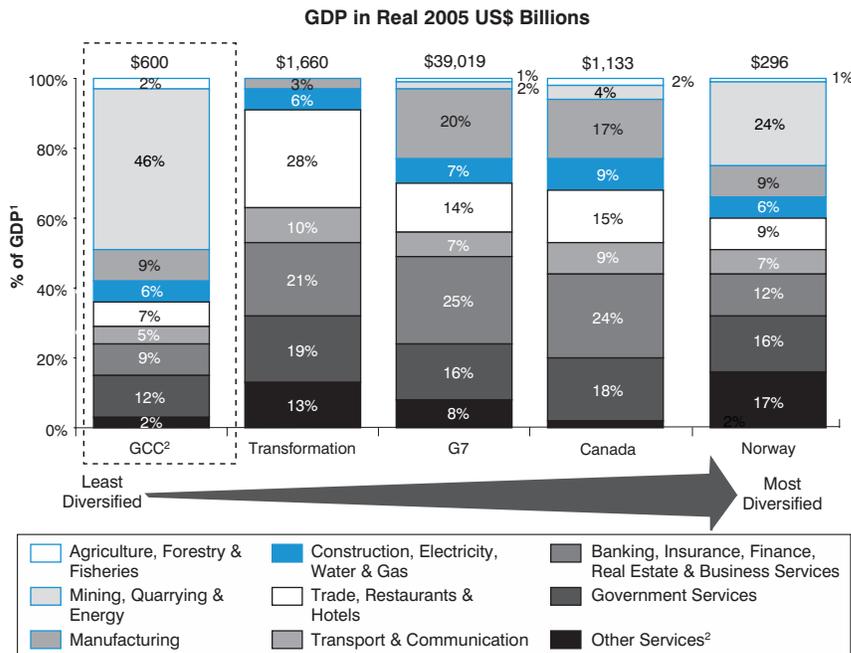
region’s stalwart effort to diversify its economy. Contrast this with the UAE’s Abu Dhabi, which drew 59 percent of its 2005 GDP from oil and gas, and whose growth in non-oil sectors continues to lag.

A common explanation for the pervasive lack of economic diversity seen in areas such as Abu Dhabi is that economic concentration is inevitable in regions that are rich in a particular natural resource—such as Brunei, whose economy is entirely dependent on its reserves of petroleum and natural gas; Zambia, whose economy is entirely dependent on its reserves of copper; or Botswana, whose economy is tied tightly to the diamond-mining industry.

However, our findings indicate that being hydrocarbon-rich does not predestine economic concentration. Norway, for example, produces approximately 3 million barrels of oil per day—an amount consistently exceeded only by KSA—yet it has been able to adequately distribute its GDP across a variety of productive economic sectors, and its revenues from oil and gas make up only approximately a quarter of its domestic output. Canada has done much the same; despite its healthy trade in oil and gas, it receives only 4 percent of its GDP from that industry. Exhibit 3 shows the breakdown of GDP by economic sector for the GCC, transformation, and G7 economies, as well as for Canada and Norway specifically, in 2005.

The difference in diversity across categories is wide. Comparing the diversification of the GCC countries with the diversification of Canada and Norway, specifically, shows the

**Exhibit 3**  
*GDP Breakdown by Economic Sector in the GCC, G7, Transformation, Canadian, and Norwegian Economies, 2005*



<sup>1</sup> May not total 100% due to rounding.

<sup>2</sup> Total GDP regroups consolidated economic output from all six GCC economies.

Sources: UAE Ministry of Economy; SAMA; Central Bank of Kuwait; Oman Ministry of National Economy; Central Bank of Bahrain; Qatar Planning Council; IMF; OECD; official statistics bureaus of sampled economies; Booz & Company

sectors generally reflects and shapes GDP distribution across sectors.

In GCC countries, however, employment is distributed quite unevenly. The oil and gas sector, which produces 47 percent of GCC countries' GDP, provides work for only 1 percent of the employed population. The vast majority of the workforce is employed in sectors that are relatively less economically productive and of secondary strategic importance in sustainable development—such as construction and utilities, government, and other services. Government services alone constitute around 20 percent of total GCC employment. This means a majority of workers are laboring in sectors that are supporting other economic sectors, rather than driving growth themselves. Countries with this type of labor distribution may suffer economically.

### Evaluating Economic Sustainability

After assessing the overall diversification of GDP and employment across sectors in our surveyed countries, we set about measuring the relationship of economic diversification to economic sustainability. To do this, we conducted a collection of time-series and cross-sectional analyses measuring productivity and competitiveness and the relation of economic volatility to concentration, employment, and economic performance. Ultimately, we assessed diversification against sustainability to demonstrate a statistically significant relationship between the two.

difference that adopting sustained, robust policies focused on diversification can make in an economy. Norway, for instance, has not only created a social pension or sovereign wealth fund from oil profits that is invested abroad, both insulating the country from the shock of oil-price changes and removing excess liquidity from the economy. It has also invested labor and capital and explored knowledge and technology in industries—such as manufacturing—that were doing well but had some dependence on oil, so that they could diversify. The success of Norway and Canada also highlights the fact that nations rich in any single commodity must be particularly

attentive to the issue of diversification to avoid a natural tendency toward economic concentration.

**Labor Distribution Should Support Growth.** In addition to examining the distribution of GDP in the sampled GCC, G7, and transformation economies, we also examined the distribution of labor categories. In G7 and transformation economies, employment tends to be balanced across a variety of profitable sectors, skewing slightly toward service sectors such as trade, tourism, financial and business services, and real estate. Overall, employment distribution across

**Poor Economic Diversity Is Linked to Low Productivity and Competitiveness.** Productivity is directly related to competitiveness: The more people and/or capital it takes to do a job or create a product, the lower productivity is. The lower productivity is, the more a product costs, and the less competitive that product can be in the marketplace. Because the workforce in GCC countries is so sparse in its largest economic sector (oil and gas) and so heavily distributed in less economically important sectors (construction and government), labor and capital productivities in non-oil sectors lag far behind those in oil and gas. For example, in 2005, the GDP labor productivity in GCC countries was US\$1.6 million per employee for the oil and gas sector but only US\$9,300 per employee for construction. GDP-to-credit capital productivity was US\$121 million per unit of credit for the oil and

gas sector but only US\$1.2 million for construction.

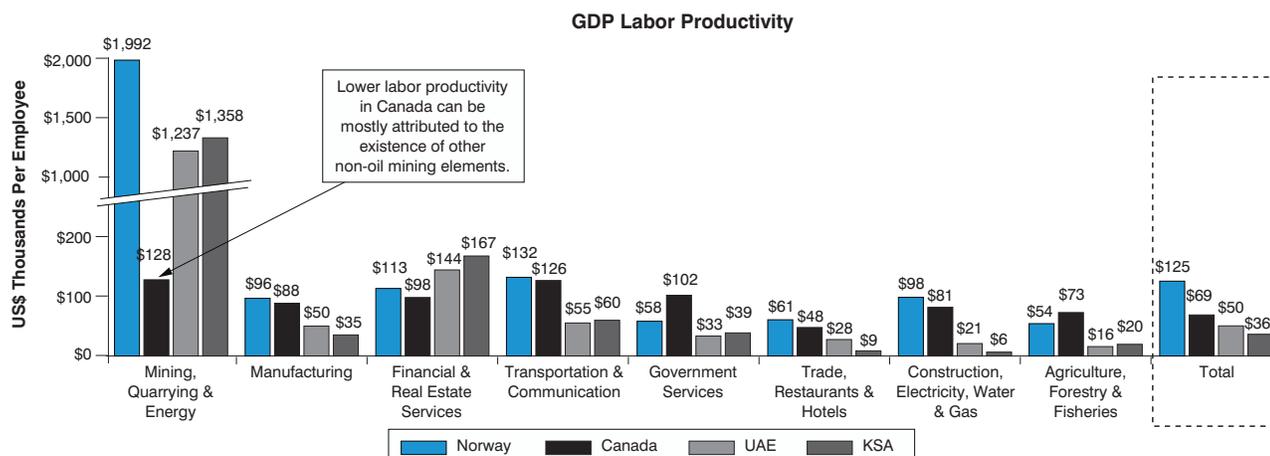
These findings are important because labor and capital productivity are key measures of sustainable economic development. It appears that poor economic diversification—reliance on a single economic sector—tends to have an unfavorable effect on the productivity and competitiveness of the other, lagging sectors. Indeed, labor and capital productivities across all GCC economic sectors fall consistently below benchmarks; specifically those of comparable hydrocarbon-rich economies (see Exhibit 4).

This underperformance is to a large extent persistent across the different GCC economies and productive sectors, with hardly any exceptions. Moreover, even for the oil and gas sector, GCC output per employee remains inferior to that of Norway (approximately US\$1.6 million/employee for the GCC countries,

versus approximately US\$2 million/employee for Norway), suggesting pervasive, economy-wide inefficiencies or the use of less-than-ideal production processes. Those gains in labor and capital productivities that have been achieved have mostly been visible in the oil and gas sectors and absent or negative in others. Evidence from the UAE, for example, shows that gains in productivity have been offset by losses, thus leading to relative stagnation in terms of overall productivity and competitiveness (see Exhibit 5).

Low productivity levels translate into high costs to produce goods and services. That in turn has a direct, negative effect on competitiveness, slowing economic growth and threatening a nation's long-term and sustainable economic development.

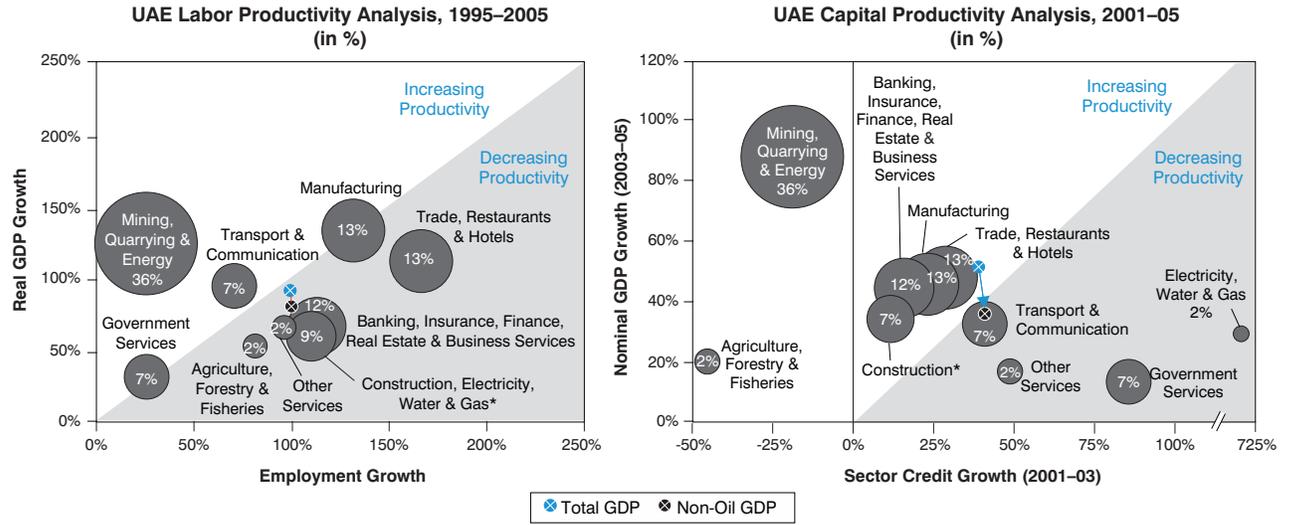
**Exhibit 4**  
GDP Labor Productivity in Comparable Hydrocarbon-Rich Economies, 2005



Sources: Abu Dhabi Statistical Yearbook; Abu Dhabi Census; UAE Ministry of Economy; SAMA; Statistics Canada; Statistics Norway; Booz & Company

## Exhibit 5

UAE Productivity Analysis by Economic Sector (Based on Recent, Reliable Data)



Note: Size of bubble equals relative share of 2005 GDP

\*Construction is split from electricity, water, and gas for the purposes of the capital productivity analysis due to dramatic differences in their respective growth rates.

Sources: Central Bank of the UAE; UAE Ministry of Economy; WDI; Booz & Company

### *High Economic Concentration Leads to Volatile Growth and Fluctuating Economic Cycles.*

High economic concentration makes an economy vulnerable to external events, such as changes in the price of the dominant commodity. The vulnerability of the GCC economies to this factor is shown in Exhibit 6 (see page 8), which reflects the high sensitivity of GCC real activity to oil-price shocks versus the relative stability of the G7 and transformation economies over the same period.

The exhibit shows that, with time, economies worldwide have somewhat adapted to better absorb oil-price shocks, as businesses, governments, and individuals have integrated changing oil prices into their decision making, expectations, consumption, savings, and investment patterns. Despite this worldwide

trend, the health of GCC economies has remained more correlated to oil prices than has the health of G7 and transformation economies—and the GCC economies are thus more exposed to the effects of volatile changes in price. Between 1999 and 2005, for example, the GDP of G7 countries shifted up and down only 2 percentage points per annum at most, although oil prices fluctuated dramatically. In contrast, the GDP of GCC countries from 1977 to 2005 moved between recessionary periods when growth was less than 0 percent, to relatively normal periods with growth of 2 to 3 percent, to periods of explosive expansion, with growth jumping to 9 percent.

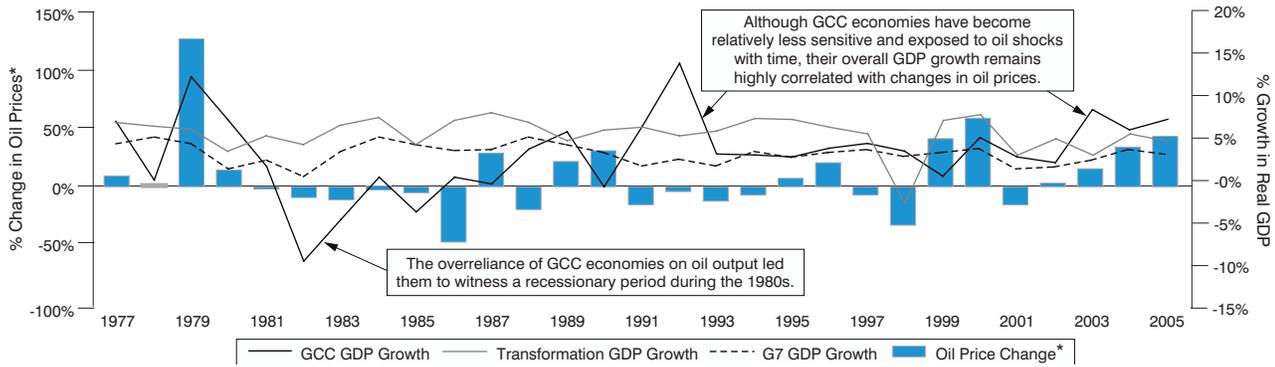
Furthermore, exposure to oil-price shocks has resulted in oscillating business cycles, as economies expand and contract in response to rises and dips in the price of oil, and

likely spillover of volatility from oil into non-oil sectors.

This sensitivity of GCC economies to changes in oil prices is manifested in growth volatilities across not just oil and gas, but all the different sectors that contribute to the bulk of economic output and employment. Evidence from KSA, for example, shows that volatility is widespread in the kingdom's economy, suggesting both inadequate economic diversification and significant spillover of volatility from oil to non-oil sectors. Several factors have contributed to this spillover, including government sensitivity to non-oil spending when oil prices are low; a dependence in the non-oil internal economy on oil output and prices; and limited non-oil exports. Those factors also suggest inadequate and relatively ineffective economic diversification.

**Exhibit 6**

*Oil Price Change versus Real GDP Growth in the GCC, G7, and Transformation Economies, 1997–2005*



\*Average annual Brent Crude Oil spot price from 1977 until 2005 was tracked against discrete annual real GDP growth for the GCC, G7, and transformation economies. Sources: WDI; Booz & Company

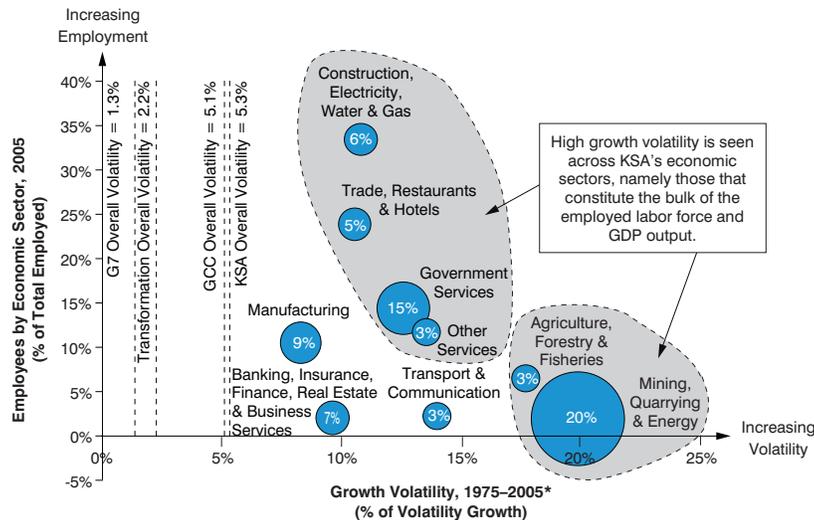
Exhibit 7 shows that the highest growth volatility in KSA has been in the oil and gas sector, which constitutes the bulk of the region’s economic output. Similar growth volatility is to a large extent

pervasive across the economic sectors of the other GCC countries, particularly Kuwait, Qatar, and the UAE. Growth volatility in oil and gas and a number of other economic sectors has been as high

as 18 percent in KSA and in excess of 20 percent in the UAE. Although some volatility is to be expected in all markets, a high level of volatility hinders sustainable economic growth, mainly because periods of prosperity generally do not offset the negative structural effects of bad times. In other words, economic shocks tend to have a long-lasting negative effect.

**Exhibit 7**

*KSA Employees and Growth Volatility by Economic Sector*



Note: Size of bubble equals relative share of 2005 GDP. \*Historical aggregate and sector volatilities are measured by the standard deviations of aggregate and sector real activity growth rates, respectively, over the sampled period. Sources: SAMA; KSA Ministry of Economy and Planning; WDI; Booz & Company

**Volatility in Concentrated Economies May Spawn Structural Unemployment Issues and Engender Systemic Risks.** Significantly, the elevated volatility seen in GCC countries is highest in the economic sectors that employ most of those nations’ populations. For example, volatility is prevalent in sectors that employ 85 percent of KSA’s workforce and in sectors that employ 80 percent of the UAE’s workforce, including government services; construction, electricity, water, and gas; and trade, restaurants, and hotels. Having such high volatility in such a large portion of economic sectors presents a particular

problem. It causes frequent unemployment (unemployment in most GCC economies has been consistently at double-digit rates, and this employment challenge is expected to worsen as a substantial segment of the population reaches working age in the near future and overflows the job markets) and often results in high structural unemployment rates—that is, in this context, unemployment that occurs because the available laborers do not have the skills or knowledge needed to match the available jobs. Displaced workers with particular knowledge and skill sets (or lack thereof) cannot easily be moved into different sectors of the economy without an extensive expenditure of time and training. Regions of the United States, for example, have suffered from structural unemployment

issues as manufacturing moves offshore and former manufacturing employees struggle to find a new place in the economy.

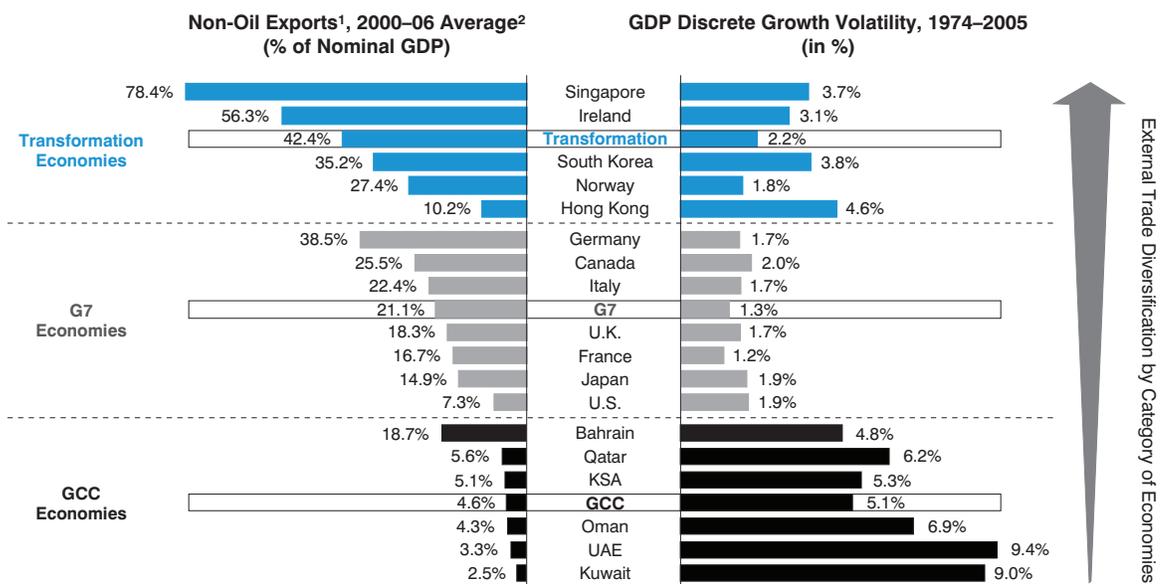
Volatility in non-oil sectors in the GCC region has decreased over time, ranging from 5 to 9 percent. This is a significant improvement, given that the number in the UAE, for instance, used to range between 10 and 35 percent. However, this reduction could be the result of there being fewer aggregate shocks rather than the result of effective diversification. Despite these reductions, growth volatility in GCC economies remains high when compared with the volatility of analogous economies.

**External Trade Helps Reduce Economic Volatility.** On a positive

note, it does seem that this pervasive volatility (and its enduring spillover effects) can be mitigated with the development and diversification of high-value-added exports of goods and services. In the G7, GCC, and transformation economies studied here, when non-oil exports are mapped against real activity volatility, an inverse relationship is revealed between external trade diversification and economic uncertainty (see Exhibit 8). In a nutshell, the higher and the more diversified a country's exports, the lower its volatility.

The evidence in Exhibit 8 shows that oil-dependent economies such as those of the GCC—and any economies based on a single commodity—will become effectively diversified only when they successfully create a robust

**Exhibit 8**  
*External Trade Diversification and Economic Stability in the GCC, G7, and Transformation Economies*



<sup>1</sup> Export data are net of reexports and include only exports of non-oil goods—and thus are not inclusive of export services.

<sup>2</sup> Average data ranges vary for the different countries depending on data availability.

Sources: UAE Ministry of Economy; SAMA; Central Bank of Kuwait; Oman Ministry of National Economy; Central Bank of Bahrain; Qatar Planning Council; EIU; Booz & Company

quantity and variety of exports and worldwide purchasers for them. Norway and, to a certain extent, Canada provide examples of nations that have done this successfully. For Norway, non-oil exports make up 27.4 percent of its GDP, but it has only a 1.8 percent GDP growth volatility score.

This evidence serves as a further reminder that policymakers in hydrocarbon-rich nations must pay attention to the issue of economic diversity—and in particular, to the development of external trade. Otherwise, high but concentrated economic growth is likely to be outweighed by excessive volatility and lead to low risk-adjusted performance.

This unfortunate phenomenon is shown in Exhibit 9, which evaluates the Sharpe ratio of the studied G7, GCC, and transformation economies. The Sharpe ratio measures an economy’s risk-adjusted performance—that is, the average economic return per unit of volatility—by dividing the economy’s average GDP discrete growth premium by the historical growth premium volatility.

Exhibit 9 shows that unlike G7 and transformation economies, GCC economies have high growth premiums that are outweighed by excessive volatility, leading to low risk-adjusted performance.

On average, the transformation economies increase volatility by

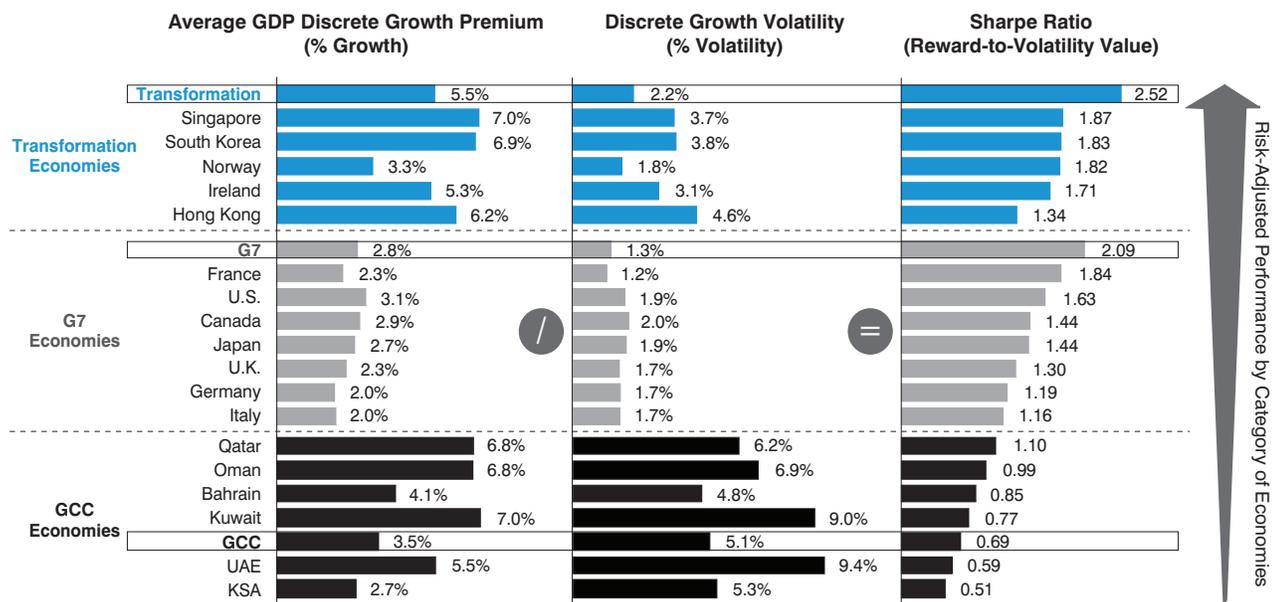
1 percent with growth of 2.52 percent; in comparison, the GCC economies increase volatility by 1 percent with growth of just 0.69 percent. In other words, for the GCC economies, any increase in growth inherently increases economic risk—rather than economic reward.

### Diversification Is a Critical Component of a Sustainable Economy

So what is the solution? How can economies that have historically relied on the export of a single commodity reduce volatility, improve risk-adjusted real activity performance, and therefore achieve sustainability? Is economic diversification truly a key part of accomplishing this?

#### Exhibit 9

Real GDP Growth, Historical Volatility, and Risk-Adjusted Performance in the GCC, G7, and Transformation Economies, 1974–2005



Note: The average annual GDP discrete growth premium measures the adjusted real growth above a certain threshold that is equal to the risk-free real GDP growth rate of zero, which, in reality, is assumed to be a rate that matches year-on-year inflation.  
Sources: UAE Ministry of Economy; SAMA; Central Bank of Kuwait; Oman Ministry of National Economy; Central Bank of Bahrain; Qatar Planning Council; IMF World Economic Outlook 2006; OECD; official statistics bureaus of sampled economies; Booz & Company

To answer these questions, we compared:

- GDP growth volatility against economic concentration for the studied countries
- GDP reward-to-volatility ratio (i.e., the Sharpe ratio) against the diversification quotient for the studied countries.

The results of our analysis are shown in Exhibit 10.

These analyses identify a clear link between economic diversification and sustainable development. The left-hand side of the exhibit shows that nations with a high concentration ratio—such as many of the GCC countries—suffer from significantly higher growth volatility than do G7 or transformation nations. The right-hand side of the exhibit tells the same story, from the

opposite perspective. It shows that nations with a high diversification quotient—such as Norway, South Korea, and Ireland—enjoy a high Sharpe ratio; that is, a high economic return per unit of volatility.

It is important to note that the regression estimators in the analysis are statistically significant. About 30 percent of the variation in GDP growth volatility and reward-to-volatility ratio is captured by the single independent variables of economic concentration and diversification, respectively. The remaining 70 percent of the variation not explained by the regression can potentially be captured by other factors, such as oil prices, inflation, exchange rates, investor and consumer confidence, asset price shocks, and so forth. Many of these factors, despite having some bearing on the economy,

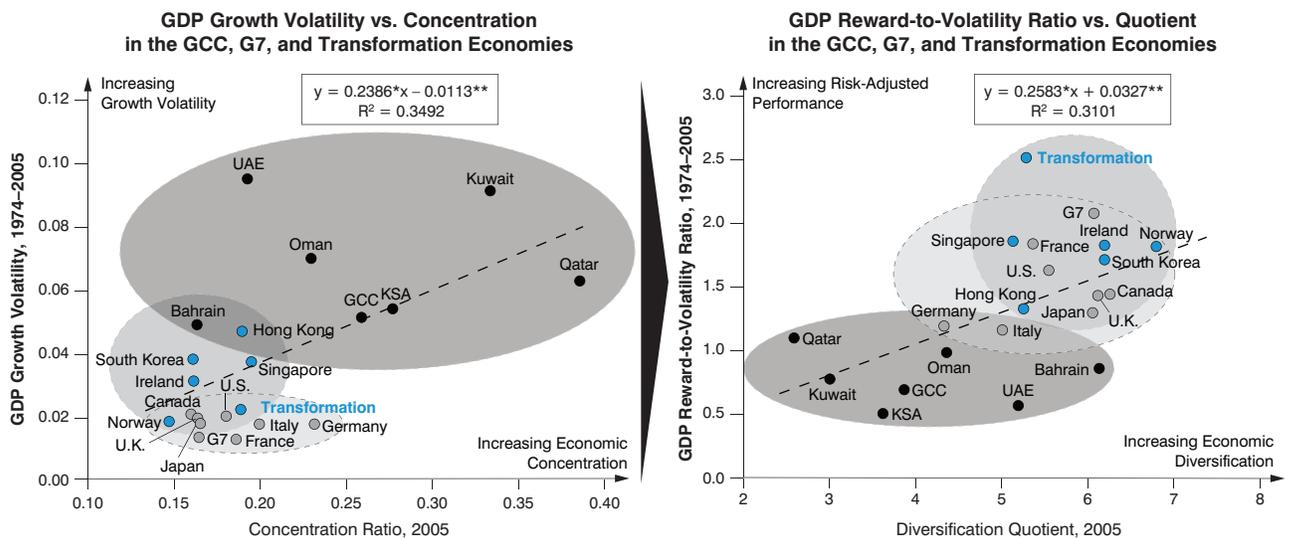
would be difficult for policymakers to directly and actively influence or shape. Economic diversification, in contrast, is measurable, monitorable, and now known to be a critical component of a sustainable economy. Policymakers who want to develop sustainable economies have a target in place—and have their work cut out for them.

### Effecting Sustainable Development: Summary of Key Findings and Recommendations for Policymakers

This study has gone some way in empirically validating the links between economic diversification and sustainable growth. Our main findings are as follows:

- Levels of economic concentration and diversification are very

**Exhibit 10**  
*Relationship between Economic Diversification and Economic Sustainability*



\*Indicates a statistical significance at a 99% confidence interval.

\*\*Panel-data regressions using the General Method of Moments (GMM) showed visible improvements to the overall adjusted goodness of fit. Additionally, diagnostic checks and a collection of regressions run with an extensive array of control variables asserted that the found relationships are both statistically valid and reliable.

Sources: Official statistics bureaus of sampled economies; Booz & Company

different in the G7, GCC, and transformation economies, with the GCC economies appearing to be the most concentrated and inadequately diversified.

- Hydrocarbon-rich nations, such as those in the GCC, are not necessarily destined to suffer poor economic diversification, as shown by the paragon economies of Norway and, to a certain extent, Canada and by the progress being made in the UAE's Dubai, which going forward would still need to further develop its external markets.
- Levels of employment distribution across economic sectors are also very different in the G7, GCC, and transformation economies. Employment distribution seems to be balanced in G7 and transformation economies, but skewed toward low-value-added sectors, such as construction and government, in the GCC economies.
- High economic concentration exposes economies to exogenous events such as changes in oil prices; this exposure creates economic volatility, as verified by the high sensitivity of GCC real activity to oil-price shocks.
- Overall volatility and its ensuing spillover effects can be mitigated with the effective development and diversification of high-value-added exports.
- Volatility minimization and risk-adjusted real activity performance improvement can be largely achieved with increased economic diversification.

These findings have important implications for policymakers interested in ensuring that their nation enjoys a strong and

sustainable economy. This evidence shows clearly that policymakers—particularly those whose economies have historically relied on a single export—must focus on economic diversification when creating development agendas, and must rigorously measure and monitor economic diversity in evaluating the success of their policies.

Specifically, policymakers should pursue the following courses:

- Actively seek to diversify their economic base in terms of economic output and input distributions. Depending on the degree of interventionism appropriate in each country, public and private stakeholders should incentivize the injection of labor and capital into productive economic sectors that can sustain real growth in the long-term, as well as the development of new knowledge and technology.
- Specifically foster the growth of the external sector when promoting diversification; that is, the export of a wide range of high-value-added goods and services to a wide range of destinations.
- Continuously and consistently enhance the productivity and competitiveness levels of the economic base by drawing on resources and making strategic investments in sectors, industries, and value chains where there is a competitive advantage and where there is market opportunity and growth potential. This effort can involve enhancing human capital, by increasing education levels and importing skilled talent, as needed; enhancing financial capital by developing new financing schemes and instruments; optimizing

the exploitation and use of natural resources; and enhancing technology and knowledge with the aim of entrenching innovation.

- Innovation, in turn, allows economies to create almost ex nihilo economic value by innovating a link in the value chain, an industry, a cluster, or even a whole sector. This said, it remains crucial to an economy's success to carefully time the transition toward innovation-based output generation. Although preparing the ground and establishing the prerequisites and underpinnings of an innovation economy should be initiated at early transformation stages, the effective generation of economic output out of innovation sectors should come as a natural phase in an economy's transformation path. A premature reliance on innovation sectors is likely to minimize chances of success and expose a not-yet-immunized economy to harmful and disruptive competition.
  - Use the metrics of economic concentration and diversification, as well as economic sustainability and uncertainty, as targets when determining policy—and aim to further understand the dynamics between them.
  - Monitor and devise clear participatory and integrated diversification strategies and mechanisms by which economic volatility and spillover effects, systemic uncertainty, and perturbed business cycle transitions can be significantly mitigated.
- Taking these steps will help policymakers create long-term, sustainable growth in their economies—and in so doing, help ensure stability and a high standard of living for their nations.

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