Part 3
Making Miracles

Part 2 of this Report describes how the forces of creation—the protagonist of economic growth—are weak in middle-income countries. Many large incumbents do not innovate or infuse global technologies, and many entrants do not disrupt. By contrast, the forces of preservation—the antagonist to creation—are strong in middle-income countries. Incumbent firms and social elites often preserve the status quo. Meanwhile, the forces of destruction—which are often needed to remove the obstacles to creation—are held back by the forces of preservation. Together, the forces of creation, preservation, and destruction are unbalanced in middle-income countries struggling with slower growth.

Part 3 of this Report examines how middle-income countries can accelerate growth by balancing these three forces, which entails the following:

- **Disciplining incumbency (chapter 7).** Middle-income countries will need to weaken the forces of preservation that protect incumbents from healthy competition. Contestable markets—and the policies that enable them—give incumbent firms the incentives to compete and upgrade their capabilities because their products and processes could be replaced by producers from other countries. This effort also entails opening access to energy markets and other sectors now dominated by favored entities, especially state-owned enterprises. In addition, middle-income countries will need to strengthen the capacity of competition agencies to identify and rein in firms that abuse their incumbency advantage. Instituting progressive tax policies to discipline incumbent elites while still incentivizing innovation will be needed as well.

- **Rewarding merit (chapter 8).** To strengthen the forces of creation, middle-income countries should reward merit activities—those with positive externalities; that is, those with positive effects on general well-being. This entails redesigning policies to focus on assessing the value added of firms in jobs, exports, technology infusion, and innovation instead of designing policies that simply focus on the size of firms. Middle-income countries will also need to design social policies that avoid targeting the distribution of incomes and instead focus on allocating talent and human capital more efficiently by ensuring that all those who have talent and display acquired ability have access to education, employment, and business opportunities. Furthermore, energy policies will need to shift from targeting the distribution of energy sources to supporting
activities that reduce emissions and local air pollution.

- **Capitalizing on crises (chapter 9).** The destructions of outdated arrangements—essential for creation—are often weak during boom times. Crises play an important role in reallocating resources and making room for new arrangements—in enterprises, jobs, technologies, policies, and public institutions. For example, the energy crisis and the climate crisis are driving rapid technological progress and the deployment of low-carbon technologies. Middle-income countries have an opportunity to infuse global technologies and produce green intermediates for global markets. Crises can also foreshadow social change. In the Republic of Korea, the government adopted comprehensive welfare reforms following the 1997–98 financial crisis, guaranteeing free access to public health care, an old-age pension, and expanded unemployment insurance for all citizens—particularly women, who bear a disproportionate burden of caregiving.

The development strategies outlined in chapters 7, 8, and 9 must be tailored to the transitions needed for a middle-income country to achieve high-income status. For each transition, middle-income countries must, to escape being trapped in slower growth, adapt their institutions to balance the forces of creation, preservation, and destruction—the key dynamic for any country aspiring to combine investment with infusion and innovation. Balancing these forces will require policy makers to make miracles. But only a handful of countries have succeeded. It will require implementing difficult and painstaking reforms, but the payoff will be significant.
Disciplining Incumbency

Key messages

- By promoting contestable markets, middle-income countries can strike a balance between supporting incumbents and ensuring that they do not abuse their market power.
- Middle-income countries will need to update their institutional arrangements that favor incumbents, including by retracting the government’s direct involvement in productive enterprises, challenging state-owned incumbents in the electricity industry, and weakening the norms that discriminate against women and other marginalized groups.
- Middle-income countries can encourage incumbents to strengthen creation through policies that enhance trade openness, support upgrading firm capabilities, and incentivize the free movement of ideas and people, including highly skilled talent.
- Middle-income countries can ensure the effectiveness of competition authorities to rein in errant incumbents and use fiscal policy to make elites contestable.

Balancing incumbents’ innovation and abuse of dominance

Part 2 of this Report highlighted that incumbent firms, especially market leaders, can be the vanguards of technical progress. But they can also use their incumbency advantage to block other firms from entering the market and competing, thereby resisting progress. In designing policies to facilitate investment alongside infusion and innovation, middle-income countries will need to strike a balance between supporting the growth of market leaders and ensuring that these firms do not abuse the market power that comes with their larger scale in their market. For example, in Italy labor productivity has stagnated for more than two decades. Recent research has highlighted how incumbents use their dominance to hold back progress.¹ Market leaders tend to bolster political connections by hiring more local politicians as they gain larger market shares; at the same time, they reduce their efforts to innovate (figure 7.1).
The challenges of incumbency extend beyond firms. The economic elite has grown rapidly in many middle-income countries. In 2004, only 20 percent of the billionaires in the *Forbes* list were from emerging markets. By 2014, this share had risen to 43 percent and by 2023 to 48 percent. China ranks second in the number of billionaires (496) after the United States (735). The recent surge of billionaire wealth in emerging markets can be traced to the creation and management of new companies. Some company founders and executives are likened to superstar billionaires by creating popular products known by millions or introducing innovative production methods that expand consumer choices and reduce prices. Examples include Jack Ma (Alibaba) and Narayana Murthy (Infosys). Many in the economic elite have amassed their fortunes through their innovative work—a reward for their ability, grit, risk-taking, and ingenuity. But others have inherited wealth or thrived in environments where business regulations, government patronage, and limited international competition have protected them.

Dominant incumbents can block the policy reforms needed to promote social mobility and talent development. In early 2013, Mexican president Enrique Peña Nieto tried to take on one of the world’s most powerful teacher unions, the National Union of Workers in Education (Sindicato Nacional de Trabajadores de la Educación, SNTE). The union was so large and powerful that it operated as a political machine.

**Figure 7.1** In Italy, market leaders increase their political connections while reducing innovation

The x-axis shows the top 20 firms in a market ranked by employment share, with the rank of 1 indicating the highest employment share (“market leader”). The assessment covers markets defined at the six-digit industry level for 20 regions in Italy from 1993 to 2014. The dark blue line is the line of best fit for patents per 100 workers. The orange line is the line of best fit for the number of local politicians employed per 100 workers. “Six-digit” refers to ATECO (Classification of Economic Activity) (database), Italian National Institute of Statistics, Rome, https://www.istat.it/en/classification/ateco-classification-of-economic-activity-2007/.

**Source:** Akcigit, Baslandze, and Lotti 2023.

**Note:** The x-axis shows the top 20 firms in a market ranked by employment share, with the rank of 1 indicating the highest employment share (“market leader”). The assessment covers markets defined at the six-digit industry level for 20 regions in Italy from 1993 to 2014. The dark blue line is the line of best fit for patents per 100 workers. The orange line is the line of best fit for the number of local politicians employed per 100 workers. “Six-digit” refers to ATECO (Classification of Economic Activity) (database), Italian National Institute of Statistics, Rome, https://www.istat.it/en/classification/ateco-classification-of-economic-activity-2007/.
Hundreds of members held administrative positions in the education system (including at the highest levels), and the union exercised control locally over hiring decisions and, in some states, over teacher payroll. Reforming teachers’ career paths and replacing underperforming teachers with those needed to promote children’s achievement were enormous challenges under those circumstances.

State-owned enterprises (SOEs) are the dominant incumbents in fossil fuel power generation. As a result, they block entry of new players in renewables using their outsize market share, control of the grid, and influence on regulation.

Contestable markets—and the policies that enable them—are vital for middle-income countries to discipline incumbents. Contestability means that incumbents feel pressure to compete and upgrade because their existing products and processes can be displaced by technologically sophisticated producers within their own country or from other countries. Such contestability is central to creative destruction. Contestability is fostered by three sets of policies: (1) institutions that weaken the forces of preservation; (2) incentives that strengthen the forces of creation; and (3) interventions that target errant incumbents to destroy harmful arrangements (figure 7.2).

**Figure 7.2** Promoting contestability through institutions, incentives, and interventions

Targeted interventions, often focusing on specific firms or individuals, are used as instruments of first resort by policy makers. But these instruments end up being ineffective and can hinder innovation if not designed with care. Policy makers should recalibrate their strategies by first strengthening the institutions that weaken the forces of preservation and then aligning the incentives to strengthen forces of creation. Targeted interventions are effective when they follow institutions and incentives.

### Updating institutions to weaken the forces of preservation

Institutions—formal rules and informal norms—are often well intentioned when they are designed in their specific contexts. But they may end up persisting beyond their usefulness, protecting the status quo. Such persistence hurts the economic prospects of middle-income countries that need to rapidly change their growth model by adding infusion and innovation to investment. Institutional arrangements that favor incumbents will then need updating.

### Retracting protection of incumbents, including state-owned enterprises

In middle-income countries, institutional inertia protects incumbents, strengthening the forces of preservation. Turnover, especially among market leaders, is low. In many middle-income countries, a small number of companies dominate markets, a survey suggest (figure 7.3).

Policy makers will need to retract government’s direct involvement in productive enterprise, while removing outdated regulations that favor and protect incumbents. Often, incumbents are protected by licenses that limit the number of market participants or directly restrict market entry. Standards and minimum firm sizes can further protect incumbent interests. These dangers should be weighed against benefits, such as the incentives to improve quality that...
For example, the standard connector (SC), a fiber-optic connector developed by Tyco Electronics (now known as TE Connectivity Ltd) used in data networking and telecommunications, has become the dominant international standard. How? By joining national standardization organizations in many countries, the company influenced the standard-making process, with the result that European and international standards refer to the SC connector. Tyco thus gained a significant global market share, earning an additional US$50–$100 million in profits between 1995 and 2004.

India’s License Raj—a system of central controls introduced in 1951 regulating entry and production activity in the registered manufacturing sector—is another example. The system favored incumbents and stifled Indian entrepreneurs for more than four decades. Its dismantlement during the 1980s and 1990s amplified entry and business dynamism, and the effects were most prominent in states with labor market institutions that favored employers.

Often, dominant incumbents in local markets lobby local authorities to erect ad hoc entry barriers. In Italy, such local entry regulations in the retail market increased price margins by 8 percent and reduced the productivity of incumbent firms by 3 percent in the early 2000s. In Peru, when the national competition agency (Indecopi) strengthened its powers to dismantle local and sector-specific regulatory and administrative entry barriers in 2013, productivity increased significantly, including for firms operating in downstream sectors or in the same municipality.

Product market regulations (PMRs), intentionally or inadvertently, protect incumbents and constrain competition (figure 7.4). These regulations include regulatory barriers to firm entry and competition in a broad range of key policy areas,

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**Figure 7.3** In many middle-income countries, markets are dominated by a few business groups, as a survey suggests

![Graph showing extent of market dominance (0–7) across different countries, comparing middle-income and high-income countries.](source)

*Source: WDR 2024 team based on Schwab (2019).*

*Note: The survey question: “In your country, how do you characterize corporate activity?” [1 = dominated by a few business groups; 7 = spread among many firms]. OECD = Organisation for Economic Co-operation and Development.*
In middle-income countries, restrictive product market regulations are pervasive.

Figure 7.4


Note: The economywide Product Market Regulation (PMR) indicators measure the regulatory barriers to firm entry and competition in a broad range of cross-sector policy areas, as well as in specific services and network sectors. The PMR indicators range from 0 to 6. A lower value indicates that a regulatory regime is friendlier to competition. OECD = Organisation for Economic Co-operation and Development.

ranging from licensing and public procurement to governance of SOEs, price controls, evaluation of new and existing regulations, and foreign trade. They also include restrictive regulations in key network and services sectors (figure 7.5). Regulations tend to become less restrictive as country incomes rise.

Regulatory restrictions in critical input sectors can lead to adverse effects that constrain firm performance, job creation, and productivity in downstream industries. Anticompetitive regulations in key upstream sectors such as energy, transport, and communications, as well as professional services such as legal and accounting, hinder productivity growth and export performance in manufacturing firms. This effect is more pronounced in sectors heavily reliant on these inputs and those closer to the productivity frontier. Reforms in services sectors can positively influence the productivity of manufacturing firms, emphasizing the importance of regulatory reform in enhancing overall economic performance.

Public ownership and its weak governance are significant entry barriers. Businesses of the state (BOSs)—enterprises with majority or minority state shareholdings—act as powerful incumbents in many middle-income countries. Several middle-income countries score much higher than the Organisation for Economic Co-operation and Development (OECD) average on the presence and weak governance of SOEs in the economy (figure 7.6). Recent research presented in the World Bank’s *The Business of the State* report...
reveals that a doubling of states’ market share in a given sector is associated with 5–35 percent lower entry (figure 7.7, panel a). BOSs’ operational and financial performance lags behind that of their private peers, and they, on average, have lower labor productivity, profitability, and return on investments, while operating with higher levels of debt vis-à-vis private counterparts. Advantages such as subsidies, exclusion from competition laws, preferential access to finance, restrictions on foreign direct investment (FDI), and import bans in sectors dominated by SOEs are more prevalent in lower-middle-income countries compared to upper-middle-income countries (figure 7.7, panel b). Mechanisms to improve SOE governance and efficiency are still limited in many countries, including separation of ownership from regulation, as well as transparent and reliable information on performance-based measures.

**Challenging state-owned incumbents in the electricity industry**

Disciplining the incumbency advantage of public ownership is most pressing in the electricity industry. Although the cost of lower-carbon...
energy is declining rapidly, private providers in many countries face major barriers to entry. SOEs dominate fossil fuel power generation, mainly in coal-fired power plants, where they account for 84 percent of total installed capacity (figure 7.8). By contrast, the private sector owns about an equal share (80 percent) of the installed capacity of renewable energy.

Historically, the electricity industry was considered to be a “natural monopoly” with one dominant firm due to economies of scale in transmission and distribution (networks) and the need to coordinate generation with the grid. Arguments related to economies of scale became obsolete when smaller co-generators and gas-fired power plants became competitive with larger, utility-owned power plants. Arguments calling for economies of scope no longer hold because advances in communication technology have reduced coordination costs, enabling competition in bulk (wholesale) power markets and then in retail sales. The retail choice is similar to how consumers choose a cell phone plan; consumers can buy electricity from any supplier just as they would purchase mobile phone services from a telecom provider.13 However, as of 2020 in 125 developing countries 60 percent of consumers still relied on a public distribution utility for electricity.

In South Africa, the vertically integrated power company Eskom dominates the power

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**Figure 7.6** The BRICS and large middle-income countries have a significant presence of publicly owned enterprises and governance frameworks that stifle competition

<table>
<thead>
<tr>
<th>Country</th>
<th>Economy-wide public ownership score (0–6)</th>
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<tbody>
<tr>
<td>United Kingdom</td>
<td>0</td>
</tr>
<tr>
<td>Chile</td>
<td>1</td>
</tr>
<tr>
<td>Portugal</td>
<td>2</td>
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<td>Croatia</td>
<td>2</td>
</tr>
<tr>
<td>Colombia</td>
<td>3</td>
</tr>
<tr>
<td>United States</td>
<td>3</td>
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<tr>
<td>Japan</td>
<td>3</td>
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<td>Slovenia</td>
<td>3</td>
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<td>Germany</td>
<td>3</td>
</tr>
<tr>
<td>Mexico</td>
<td>3</td>
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<tr>
<td>Slovak Republic</td>
<td>3</td>
</tr>
<tr>
<td>Korea, Rep.</td>
<td>3</td>
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<tr>
<td>Israel</td>
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<tr>
<td>Brazil</td>
<td>3</td>
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<td>Turkey</td>
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<td>Poland</td>
<td>3</td>
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<tr>
<td>Romania</td>
<td>3</td>
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<tr>
<td>Costa Rica</td>
<td>3</td>
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<tr>
<td>Argentina</td>
<td>3</td>
</tr>
<tr>
<td>South Africa</td>
<td>3</td>
</tr>
<tr>
<td>Malaysia</td>
<td>3</td>
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<tr>
<td>Russian Federation</td>
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<tr>
<td>Malaysia</td>
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<tr>
<td>Turkmenistan</td>
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<tr>
<td>Vietnam</td>
<td>3</td>
</tr>
<tr>
<td>China</td>
<td>4</td>
</tr>
<tr>
<td>Brazil</td>
<td>5</td>
</tr>
</tbody>
</table>


**Note:** The BRICS nations are Brazil, the Russian Federation, India, China, and South Africa. The public ownership indicator shows the extent of the presence of state-owned enterprises (SOEs) in the economy and their governance. A higher score indicates higher presence of SOEs with weaker governance of SOEs. OECD = Organisation for Economic Co-operation and Development.
market with a 90 percent market share. In Poland, four companies—Polska Grupa Energetyczna (PGE), Tauron Polska Energia, Energa, and Enea—control nearly three-fourths of the market share in electricity production, with PGE holding 40 percent. Poland’s transmission grid is owned and operated by state-owned Polskie Sieci Elektroenergetyczne. SOEs use their dominant position to thwart entrants and protect their markets by blocking technological change.

SOEs are also significant investors in energy, contributing 36 percent of global energy investment. In low- and middle-income countries, SOEs are the largest providers of energy finance—accounting for 60 percent of energy investment (figure 7.9). A concern is that SOEs account for 50 percent of fossil fuel power investment globally, notably due to expanding coal plants in India and South Africa and gas plants in the Middle East and North Africa.

SOEs can block entry of new market players using their outsize market share and control of the grid. To compete for customers, rival firms need access to the grid controlled by a large incumbent. Thus access pricing becomes important. Access prices are set by the sectoral regulator.

Figure 7.7 A state presence has important effects on firm entry, market concentration, and preferential treatment

Note: Panel a: Entry is based on the rate of entry of new firms in Romania and Türkiye and on the share of revenue accounted for by young firms (less than five years old) in Brazil, Ecuador, and Viet Nam. Market concentration is captured by the Herfindahl-Hirschman Index (HHI) (Herfindahl 1950; Hirschman 1964). For the World Bank Global Businesses of the State Database, see Dall’Olio et al. (2022). Panel b: Direct (explicit) advantages are legal provisions that explicitly favor a group of market players such as state-owned enterprises. These typically involve taxes, public debt, public procurement conditions, state support, and exemptions to legal frameworks. Indirect (implicit) advantages are regulations and enforcement conditions that exist at the product, sector, or economywide level but that, in practice, unlevel the playing field in favor of a group of players. These typically involve import restrictions, bans on licenses, price or quota regulation, and poor antitrust enforcement. Businesses of the state are enterprises with majority or minority state shareholdings. The figure is based on a sample of 58 World Bank Country Private Sector Diagnostics, including 33 for lower-middle-income countries (LMICs) and 16 for upper-middle-income countries (UMICs).
To set a fair access price, the regulator may need the incumbent utility to reveal information about its cost function. The incumbent has an incentive to overstate the cost of supplying the input to its competitors in order to raise the access price and try to eliminate the competition—that is, “foreclose” the downstream market. Concerns about anticompetitive foreclosure—through high prices, discriminatory conditions, and low quality of service—are an important incentive for regulation of access in network industries such as energy supply and telecommunications that rely on networks to transmit and distribute their services (network industries).

Incumbents can collude to block new entrants. Price collusion and other forms of collusion in wholesale markets are frequent in small power systems and illiquid markets and are difficult to detect in advance by sectoral regulators and after the fact by competition agencies. Various market analyses are employed to capture the strategic aspects of competition in this industry and avoid focusing only on simplistic concentration measures. These include examining

- The incentives of producers. In the near term, it is likely that electricity markets will feature a diverse set of firms, including publicly owned utilities, unregulated generation companies, and traditional vertically integrated regulated utilities. Each type of firm is likely to respond differently to a given competitive environment.

- The price responsiveness (elasticity) of demand. In markets in which customers can easily choose not to consume a product or to consume a substitute instead, producers cannot raise their prices far above costs without significantly reducing sales. Conversely, a producer that knows that buyers find its product essential can profitably raise prices to very high levels.

- The potential for expansion of output by competitors and potential competitors. Just
as a producer with very price-responsive customers cannot exercise much market power, neither can a producer faced with many price-responsive competitors. Transmission capacity in a region and available competitive generation capacity are the main factors determining the potential for short-term competitive entry or output expansion.

Incumbents can be disciplined using less restrictive PMRs. Ex ante rules on access to essential infrastructure and open wholesale and retail electricity markets can enable entry by private providers, avoiding cases of “curtailment,” respecting the merit order (chapter 8), and encouraging entry through global competition.

**Weakening patriarchal gender norms**

Norms that discriminate against women perpetuate the hold of men (the incumbents) in the workplace. In the labor market, women remain an underused resource, particularly in the Middle East and North Africa and in South Asia, where female labor force participation is only half the level expected given these regions’ income levels. However, some factors have contributed to an ongoing rise in female labor force participation: an increase in the kinds of jobs requiring brains rather than brawn (such as professional positions); the increase in part-time jobs; the adoption of labor-saving household technologies; the growing number of educated women; the availability of contraceptives; the elimination of policies that punished married women; and the decline in social stigma against women working outside the home. In the United States, for example, the gender gap in labor force participation has nearly been eliminated. Countries with strong preferences for male children, such as China, Japan, and the Republic of Korea, have experienced similar increases in female labor force participation as their economies have grown.

Equal treatment of women in the law is associated with higher female labor force participation, smaller gender wage gaps, and more successful careers for women as employees and entrepreneurs. However, women still lack basic legal rights in many countries related to running a business, such as to sign a contract, register a business, and open a bank account. In Papua New Guinea, social norms that hinder female labor force participation and productivity are estimated to cost the economy about 0.5 percent of the gross domestic product (GDP) a year. Legal reforms that grant better property and inheritance rights also improve women’s social and economic outcomes. For example, in India the 2005 Hindu Succession (Amendment) Act, which increased a daughter’s share of land inheritance from 8 percent to 16 percent, led to an increase in women’s education rates, labor force participation, entrepreneurship, and autonomy within their marriages. The starting point to bringing more women into the labor force is implementing institutional reforms that grant women rights to property ownership, inheritance, and other basic rights to access economic opportunities.

Social norms shape personal attitudes toward women’s participation in the labor force. The likelihood of a wife being employed increases if her husband’s mother worked during his childhood. Parents also have a major impact on their children’s attitudes toward gender (even more than their peers), with mothers exerting more influence than fathers. But personal attitudes tend to be more progressive than collective social expectations, leading to misconceptions about social norms themselves.

Broad-based education and information interventions can help address both personal attitudes and misperceptions about social attitudes. For example, a study in India found that two years of classroom discussions about gender equality led to improved attitudes toward gender equality among teenage boys and girls. An intervention that encouraged teenage girls to question restrictive social norms in India combined with connecting girls to changemakers in the wider community reduced school dropout rates and early marriage and improved mental health. In China, the Spring Bud Project, initiated in 1989, promotes equitable,
inclusive, and quality education (primary to the higher education level) for girls by means of subsidies for those from low-income families, large-scale advocacy and awareness-raising, and skills building for adolescent girls, including digital competencies for income generation and employment. In Viet Nam, early exposure to female classmates led to more egalitarian gender attitudes in adulthood—even more so for men who grew up in conservative households.

The misperception about support for gender norms is widespread across the world: many people think social support for working women is much lower than it is. For example, in Saudi Arabia, some men privately support women working but underestimate the extent to which others share this view. Correcting this misperception can lead to a significant increase in female labor force participation. Saudi Arabia has experienced an unprecedented surge in female labor force participation since 2017 as a result of changing regulations and shifting social norms, the implementation of sound structural reforms, and effective government communications. Saudi Arabia’s success in increasing female labor force participation from 17.4 percent in 2017 to 36 percent in 2023 may contain important lessons for other countries and regions.

In Bangladesh, the robust growth of the garment manufacturing industry has generated more than 5 million jobs, amounting to 60 percent of female employment, one-quarter of industrial employment, and three-quarters of the country’s export earnings in recent years. Employment in the garment industry has enabled migrant women from rural areas to earn cash for their families back home and has had far-reaching positive effects on the welfare and empowerment of women in rural and urban areas.

Role models, including women who challenge traditional behavior, can change the behavior and aspirations of other women. Their actions have led to an increase in female participation in political positions in local village councils (panchayats) and assemblies in India, which, in turn, has increased female labor force participation. The rise in the number of female entrepreneurs has also boosted female labor force participation and the number of women in higher management positions. In addition, educating the public about the costs and benefits of working is an important way in which female labor force participation and other modern practices can spread through society.

Bringing women into labor markets will mean providing them with support services such as child and elderly care, safety in the workplace, and transport. Both men and women in Indonesia also cite harassment in public transport and commuting, as well as in the workplace, as important factors in women not wanting to work. For women, difficulty in finding childcare is the primary reason given for not working. A review of 22 studies across low- and middle-income countries reveals that increasing access to and reducing the cost of childcare can improve maternal labor market outcomes, including employment, hours worked, income, productivity, and job type. Governments can use various options that range from free state-provided care to offering providers and parents financial subsidies, tax incentives, or other forms of support. The challenge of accessing affordable childcare disproportionately affects poor families.

Childcare subsidies in low-income countries can help make childcare more affordable. However, such targeted policies are not very common in lower-middle-income and upper-middle-income countries, where only 9 percent and 41 percent of countries, respectively, have a law that establishes some form of financial support for families for childcare services, compared with 80 percent of high-income countries.

In countries where women lack equal economic and social rights, support for them will increase their chances of contributing to the labor market, including through gender-based affirmative action policies in education or employment (box 7.1). Upskilling and training programs are more effective when complemented with other interventions that address social, family, and logistical constraints that women can face, such as household and childcare responsibilities.
Incentives for incumbents to strengthen creation

Openness in goods and product markets is critical for firms in middle-income countries seeking to absorb and infuse global knowledge. And yet openness to trade and foreign investment works two ways. Although openness provides firms with access to larger markets, international value chains, technology, and know-how, it also exposes domestic firms to competition with international firms closer to the technology frontier. Firms can either scale up or be eased out.

Upgrading by trading

A key part of contestability is trade openness. Because the firms in middle-income countries most able to adopt global technologies are often large incumbents (see chapter 4), these incumbents will be more likely to compete by enhancing products and processes to the extent that markets are globally connected.35

Knowledge acquired from the global economy holds the key to the economic catch-up of middle-income countries. Countries that have experienced sustained high growth have rapidly absorbed know-how (knowledge that is not easily transmittable), technology, and, more generally, knowledge from the rest of the world.36 Middle-income countries far from the knowledge frontier should act quickly and furiously to infuse knowledge. The World Bank Productivity Project highlights that roughly half of overall productivity growth is driven by incumbent firms adopting new technologies, products, and processes.37 Yet middle-income countries face an “innovation paradox”—returns on infusion are believed to be high in middle-income countries, and yet firms in these countries appear to invest little.38

Box 7.1 A digital tool helps female entrepreneurs obtain capital and training in rural Mexico

To improve opportunities for indigenous rural women in some of Mexico’s southeastern states, a local nongovernmental organization, Pro Mujer, partnered with Google to help women access capital and entrepreneurship training. In February 2023, they launched a joint initiative, “Women: Force of the Southeast,” which includes an online platform to provide female entrepreneurs with free, customized online training. By means of hybrid sessions, participating entrepreneurs learn how to use social media to sell their products, prepare a budget, handle their finances, and communicate effectively. The platform also offers small loans with minimum requirements and no collateral requirements, as well as other financial services. In this region of Mexico, where about 80 percent of women live in poverty, digital technologies offer the promise of boosting skills, entrepreneurship, and incomes. The program is expected to benefit 6,000 women through small loans and about 2,000 women through entrepreneurship and financial literacy training.

Sources: Google 2023; Pro Mujer 2023.
Because knowledge is often embodied in machinery and equipment, for many countries purchasing equipment from a foreign-owned company is an important way to acquire knowledge. In fact, 45 percent of firms in Asia and 29 percent in Africa, on average, are doing so. Technology licensing is also important for infusion, as seen in Korea (see chapter 2). However, licensing increases with proximity to the technology frontier, with most firms unable to license foreign technologies, possibly reflecting weak human capabilities in using these technologies (chapter 8), as well as weak institutions protecting intellectual property. Less than 10 percent of firms in middle-income countries such as the Arab Republic of Egypt, India, and Tunisia use licensed technology. And even in other countries that are more economically advanced, such as Croatia and Türkiye, only 20 percent of firms engage in licensing (figure 7.10). Of considerable concern is that rising geopolitical tensions and protectionism can potentially worsen the diffusion of knowledge to middle-income countries.

In view of the positive effects associated with deploying advanced technologies, a government can help firms by using industrial policy to make it easier for them to license technologies. Countries can use infusion incentives, such as Korea’s temporary subsidies for the adoption of foreign technology, while pursuing more general policies such as investing in upgrading domestic skills (chapter 8) and protecting intellectual property. Market contestability also promotes faster foreign technology adoption at a lower cost to consumers.

Government policies to open markets and facilitate economic integration can also help domestic firms connect with multinational corporations.
(MNCs), thereby introducing a country’s firms to foreign production techniques, overseas markets, and international supply chains. The gains from such connections are evident in Poland. After Poland joined the European Union, the benefits to direct suppliers in sectors that use research and development (R&D) more intensively spread to the broader economy through positive vertical spillovers, while positive horizontal spillovers were boosted as domestic firms accumulated intangible assets such as licenses and patents.\textsuperscript{43} In Costa Rica, domestic firms increased productivity by 4 percent and expanded their workforce by 26 percent within four years of joining an MNC supply chain. Supplying MNCs also led to improvements in domestic firms’ production processes, supported by capacity building from the MNCs.\textsuperscript{44}

Domestic rules can encourage sharing technology with MNCs, such as licensing agreements and the ability of local suppliers to acquire competitive or licensed technologies (box 7.2).

Box 7.2 Technology for market access

Quid pro quo policies mandate that multinational firms entering the domestic market establish direct partnerships with local firms through joint ventures. The objective is to amplify the positive spillovers from multinational firms to domestic ones, solidify their connections, and facilitate knowledge transfers. Despite the potential, little is known about the impacts of such policies.

Two recent studies have examined a policy implemented in 1978 in China that required international automakers wishing to enter the Chinese market to establish joint ventures with domestic firms for production facilities.\textsuperscript{a} The policy facilitated the transmission of knowledge between foreign and domestic firms through workers. The research indicates that the likelihood of workers transitioning from a joint venture to a domestic firm was 18 percentage points higher than a benchmark in which worker movements were random. Domestic firms affiliated with multinationals through a joint venture shared, on average, 12 common suppliers, or nearly seven more than the suppliers shared between unaffiliated domestic firms and multinationals. The enhanced network explains about 65 percent of knowledge spillover via joint venturing. Finally, this policy contributed to an enhancement in product quality, measured as a 3.8 percent reduction in defects per car model for affiliated domestic firms.

\textsuperscript{a} Bai et al. (2022); Zuniga (2024).
Improving firms’ capabilities—including through exporter training, country promotion, and market research—has been shown to increase exports by reducing fixed costs and enabling firms to initiate exports, explore new international markets, or introduce new products.\textsuperscript{49} Openness to trade also matters. For example, in Pakistan increases in upstream markets’ tariff duties reduced the productivity of firms in the downstream markets.\textsuperscript{50} In Peru, firms that were helped to enhance their capabilities in the early 2000s experienced a 17 percent higher export growth rate than firms that did not participate. The higher rate was driven primarily by expansion in the number of countries served and the variety of products traded.\textsuperscript{51} Direct support programs to encourage the integration of small firms with large ones have been shown to increase the export capabilities of small firms (box 7.3). But to ensure that the benefits are durable, complementary measures to facilitate technology absorption are also needed.\textsuperscript{52}

The integration of economic principles in industrial policy design and implementation is essential for infusion for three reasons. First, assessing the need for industrial policy to address identified market failures, as well as the opportunity costs of state support, is important. Second, ensuring that design and implementation foster contestability and merit will mitigate the risks

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**Box 7.3  Supplier development programs to connect small firms with large firms**

Chile’s Supplier Development Program establishes two-way connections between potential suppliers that are small and medium enterprises (SMEs) and their large firm customers. In such connections, SMEs benefit from higher sales and employment, resulting in a lower likelihood of exit, while large buying firms enjoy higher sales and bolster their export capabilities. The program provides the government with a subsidy to execute projects sponsored by large firms, on the condition that SMEs act as suppliers for these larger companies. The program also subsidizes activities to enhance SMEs’ technical capabilities, such as providing professional advice and facilitating technology transfers. In the agribusiness sector, supplier firms saw a 16 percent increase in sales and an 8 percent increase in employment within one year after the program was approved. And the large firm customers enjoyed a 19 percent increase in sales and a 3 percent gain in the probability of becoming an exporter.\textsuperscript{a}

In the early 2000s, Costa Rica’s new PROPYME program began promoting innovation among Costa Rican SMEs by facilitating their connections with research units. These units were associated with local or foreign universities or private research centers with no university affiliation. Together, they collaborate on projects geared toward technology development, innovation, growth of human capital, or technology transfer. In addition to fostering these partnerships, the government is financing up to 80 percent of the projects’ total cost. PROPYME resulted in a substantial 19 percentage point increase in labor demand and a 9.6 percentage point boost in the probability of SMEs engaging in exporting.\textsuperscript{b}

**Source:** Zuniga 2024.

\textsuperscript{a} Arráiz, Henríquez, and Stucchi (2011).

\textsuperscript{b} Monge-González, Hewitt, and Torres-Carballo (2015).
of market distortions and favoritism. And, third, monitoring and evaluating the direct intended impact, as well as market and spillover effects, will maximize effectiveness. The European Union uses these principles in its state aid control framework, and they are now being used and implemented in different ways in various countries, including Chile, Colombia, Moldova, and the Philippines.

Upgrading to ward off foreign competitors

Trade openness improves access to larger markets, international value chains, technology, and know-how. But it also exposes domestic firms to competition from international firms closer to the technology frontier. Such competition forces domestic leaders to upgrade to “escape” competition and puts pressure on laggards to quit, especially when domestic markets are threatened by imports. Such competition can induce a reallocation of resources toward firms that are more productive. It can also incentivize innovation by well-positioned incumbents and upgrading of product quality, including by introducing greater variety.

China’s accession to the World Trade Organization (WTO) is a clear and compelling example of how market leaders in different countries have responded to competition in domestic markets. China’s overall exports grew from US$62 billion in 1990 to US$1.2 trillion in 2007, a staggering average increase of about 20 percent a year. China entered the WTO in 2001. By 2009, it had become the world’s largest exporter and by 2010 the second-largest economy in the world. How have firms responded to rising competition? In 12 European countries, imports from China increased the innovative activity of European firms that survived the competition, while reducing employment and lowering overall chances of firm survival. In heavily exposed sectors, low-tech firms suffered declines in jobs and survival rates, while high-tech ones remained relatively safe. In Argentina, there was a positive association between competition and technology upgrading. In Peru, higher exposure to foreign competition translated into higher value, quantity, and product shares of high-quality exports.

Evidence from Chile and Mexico highlight the following:

- In Chile, as imports of Chinese products rose at an average pace of 27 percent each year from 2001 to 2007, Chilean firms that were market leaders increased their product innovation by 15 percent and product quality by 22 percent. The laggards scaled back their process innovation by 11 percent and product innovation by 13 percent.

- In Mexico, firms making a “peripheral” product (one of small importance in the firm’s total sales) were more likely to pull it off the market if it faced strong competition. However, products that were core to a firm’s business (those with large shares of total output) were less vulnerable. Larger plants and “core” products benefited from expanded access to cheaper imported intermediates, helping firms improve the competitiveness of core products. Furthermore, Mexican firms that faced competition from Chinese imports used existing information technologies to increase productivity, while firms that did not face competition as intense did not, even if they acquired the same technology.

Learning by moving

Connecting with the world by means of trade is a basic requirement for incentivizing incumbents to upgrade, thereby sustaining growth at the middle-income level. But so is the free movement of ideas and people. Together, the movement of ideas, along with goods, services, capital, and people, are critical for advancing technology diffusion.

Middle-income countries should not restrict the movement of their highly skilled individuals. Their emigration can be an opportunity for the origin country rather than a loss. The extent to
which this can happen depends on how strongly emigrants remain connected to the origin countries—or even return—and on emigrants’ ability to accumulate knowledge about modern production processes and technologies in their destination countries (box 7.4). This is particularly relevant in conflict-affected countries such as Ukraine that have experienced a large outflow of highly skilled individuals. Origin countries can also create a conducive environment for knowledge transfer involving the diaspora by creating conditions such as political stability, institutional quality, and a favorable investment climate. In addition, origin countries can leverage immigrants’ earnings for economic growth by enabling a safe, efficient flow of remittances. Some countries have adopted measures to facilitate engagement with their diaspora and foster collaboration on R&D. For example, in 2019 the Academy of Sciences of Albania created NanoAlb, a virtual center to coordinate nanoscience and nanotechnology research in institutions located in Albania as well as Israel, Italy, Kosovo, Montenegro, North Macedonia, Spain, the United Kingdom, and the United States. By engaging the Albanian diaspora in those countries, NanoAlb is able to deliver a variety of products, engage in R&D activities, and offer classes in applications of nanotechnology. The center also disseminates knowledge to society at large and provides educational activities for young students.

Convincing highly skilled emigrants to return home has been a priority for countries such as China, where the Thousand Talents program brings back researchers for permanent employment or short-term visits. However, policies to bring such migrants back can have mixed results. R&D workers are highly mobile and respond to monetary incentives as well as research support and the proximity of other researchers. Reducing the tax rates for returning R&D workers may lead to an increase in the number of inventors through both the retention of domestic inventors and the immigration of foreign inventors, although it may also reduce knowledge spillovers and productivity in the countries from which they are returning. Regardless of the specific policies used, turning brain drain into brain gain remains an imperative in countries’ talent agendas.

**Box 7.4 Turning brain drain into brain gain**

A highly skilled migrant who moves to a high-income country but cannot find a job—or must work as a cab driver—cannot gain new skills, whereas one who works using his or her skills (as a manager, professional, or technician) is more likely to do so. Figure B7.4.1 measures the potential of origin countries to realize gains from knowledge spillovers from their diaspora. To quantify this potential for each origin country, the figure measures the extent to which tertiary-educated workers migrate to high-income countries and the share of tertiary-educated migrants who succeed by working in “good” occupations in the destination country. Countries in the upper right of the figure have the greatest potential because their diaspora is large and successful. To leverage this potential, they should promote knowledge exchange and connections between the diaspora and local industry leaders and investors. Other countries send fewer highly skilled emigrants to advanced countries (lower values on the x-axis), or their migrants are less successful (lower values on the y-axis). Although these features can complicate knowledge transfers, a small number of skilled and successful emigrants may nevertheless be sufficient to transmit ideas or knowledge back to their sending communities.
Box 7.4 Turning brain drain into brain gain (continued)

Figure B7.4.1 Some countries are strongly positioned to benefit from knowledge spillovers from their diaspora


Note: DIOC 2010/11 provides data on migration flows by skill and current occupation and covers migration flows from 200 origins to 34 OECD country destinations. Each scatter point in the figure represents an origin (or birth) country. For each birth country, the x-axis shows the number of tertiary-educated migrants who now live in destination countries in Western Europe or North America (log scale). The y-axis shows the share of these tertiary-educated migrants who work as a manager, professional, or technician in their destination country. These occupations are labeled “good.” They represent the top three one-digit International Standard Classification of Occupations (ISCO) codes. The sample is restricted to persons at least 15 years old. Tertiary education is defined as a completed tertiary education. The analysis includes the following 15 high-income Western European and North American countries as destination countries: AUT (Austria), BEL (Belgium), CAN (Canada), DNK (Denmark), FRA (France), DEU (Germany), IRL (Ireland), ITA (Italy), NLD (Netherlands), NOR (Norway), ESP (Spain), SWE (Sweden), CHE (Switzerland), GBR (United Kingdom), and USA (United States). For country abbreviations, see International Organization for Standardization (ISO), https://www.iso.org/obp/ui/#search. OECD = Organisation for Economic Co-operation and Development.
Interventions to correct errant behavior by incumbents

Governments can also discipline incumbents through targeted interventions. In countries where competition laws are in place (typically rules against abuse of dominance and anticompetitive agreements, as well as merger controls), competition authorities monitor, discourage, and punish anticompetitive behavior by firms and prevent mergers that could harm competition.

According to the World Bank Anti-Cartel Enforcement Database, competition authorities in 34 middle-income countries sanctioned 406 cartels from 2017 to 2022. These cartels cover a diverse set of markets, including manufacturing, construction, wholesale and retail trade, and transportation and storage. In middle-income countries in Latin America, elimination of anticompetitive practices has increased innovation and productivity (box 7.5).

For competition rules to be effective, threats of enforcement must be credible. A few middle-income countries (such as Brazil, Egypt, Mexico, and South Africa) have successfully decided cases about cartels and abuse of dominance involving digital platforms, as per the Global Digital Antitrust Database. And yet the staffing and budget limits of competition authorities in many middle-income countries reduce their capacity

Box 7.5 Tackling anticompetitive practices increases incumbents’ innovation incentives

Economic cartels are prevalent across various economies affecting many markets. Unlike other forms of anticompetitive practices, such as abuses of dominance in which efficiencies could counterbalance some of the negative effects, cartels in middle-income countries constitute the most harmful anticompetitive practices. Failure to address cartel activity limits productivity growth. Anticompetitive agreements weaken efficiency incentives, and the presence of cartels can cut the growth of labor productivity by as much as 20–30 percentage points when compared with that for industries without cartels. Evidence from a 40-year-old cartel in the United States suggests that sectoral output declined by 22 percent over the counterfactual.

Cartels also harm export competitiveness by raising the cost of inputs, with negative implications for the development of both domestic and international value chains, thereby diminishing the benefits of trade liberalization. Among countries in the Pacific Alliance (which have the lowest trade barriers in Latin America), at least 67 cartels operate in tradable sectors, and one-third of them have been in place for more than five years.

Cartels and abuse of dominance have been associated with lower wages in Mexico and lower incumbent productivity or innovation efforts in Chile, Colombia, and Uruguay. In Mexico, after antitrust sanctions were put in place wages grew by 1.4 percentage points a year and productivity rose by 2.4 percentage points a year. In Colombia, following sanctions on a sugar cartel and a separate intervention to sanction abuse of dominance, sales and value added in the affected market increased, while markups fell (figure B7.5.1). Furthermore, the leading firms increased efforts to raise productivity as they dealt with growing competition in the market after price-fixing behavior was curtailed (figure B7.5.2).

(Box continues next page)
Box 7.5 Tackling anticompetitive practices increases incumbents’ innovation incentives (continued)

**Figure B7.5.1** In Colombia, after a cartel is sanctioned, market outcomes improve through the entry and growth of previously lagging firms

![Graph showing improvements in market outcomes](source)

Source: Sampi, Urrutia Arrieta, and Vostroknutova 2022.

Note: The figure shows the changes in various market outcome variables after a cartel is sanctioned for previously lagging firms and leading firms in the unaffected market. TFPR = total factor productivity ratio.

**Figure B7.5.2** In Colombia, after an abuse of dominance case, positive market outcomes are driven by improvements in leading firms

![Graph showing improvements in market outcomes](source)

Source: Sampi, Urrutia Arrieta, and Vostroknutova 2022.

Note: The figure shows the changes in various market outcome variables after an abuse of dominance case for previously lagging firms and leading firms in affected markets. TFPR = total factor productivity ratio.

Sources: Bridgman, Qi, and Schmitz 2009; OECD 2014; Petit, Kemp, and van Sinderen 2015; Reed et al. 2022; Sampi, Urrutia Arrieta, and Vostroknutova 2022; Vostroknutova et al. 2024; World Bank 2021.


b. OECD (2014).


d. Reed et al. (2022).

e. Sampi, Urrutia Arrieta, and Vostroknutova (2022).
to act (figure 7.11). According to another sample, in those countries more than two-thirds of competition authorities have annual budgets of less than US$5 million, while the average number of staff per million inhabitants in high-income countries is more than 70 percent higher than in middle-income countries.\textsuperscript{70} Upper-middle-income countries, in particular, should invest in building independent and accountable competition authorities that are adequately funded and staffed.

Competition authorities should also have the power to advocate the elimination of regulatory restrictions of competition that can ultimately facilitate anticompetitive practices. Competition laws that do not exclude certain firms (such as businesses of the state) or specific sectors\textsuperscript{71} are also essential.

The challenges with competition are even more pronounced in partially contestable markets and natural monopolies. For example, to ensure efficient pricing, controls are needed for

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**Figure 7.11** Competition authorities in middle-income countries need more capacity to deal with sophisticated policy problems

![Graph showing competition authorities' capacity](image)

**Source:** OECD Competition Statistics Survey data (OECD 2024).

final services and products in the case of natural monopolies and only for essential inputs in the case of partially contestable markets. By contrast, price controls can completely undermine market signals in competitive markets.

As economies (or sectors) move closer to the technology frontier, competition agencies will need to consider a possible trade-off between innovation incentives and market power.\textsuperscript{72} When market power reduces the incentive to innovate, firms may resort to anticompetitive behavior, necessitating the intervention of antitrust policies. Here, competition and innovation policies will have to be coordinated to achieve the optimal outcomes for innovation.\textsuperscript{73} Again, for the sake of coordination, competition authorities must have adequate independence, budget, capacity, and technical sophistication.

For upper-middle-income countries shifting to innovation, a special concern should be the containment of \textit{killer acquisitions}\textemdash that is, when incumbents acquire innovative firms specifically to kill future competing products and technologies.\textsuperscript{74} Not all acquisitions are deadly: many young entrepreneurs try deliberately to be acquired by an incumbent, producing complementary innovations that an incumbent can scale up. Antitrust agencies must use a risk-based approach to carefully examine the effects of risky acquisitions on corporate innovation and future competition.

Even if competition authorities use counterfactuals to anticipate the potential effects of a deal, building such scenarios in rapidly evolving markets such as digital ones may result in errors. Thus distinguishing good concentration from bad is hard.\textsuperscript{75} In these instances, a dynamic, forward-looking perspective is essential, building on credible data. Authorities should consider the future potential of the acquired firms, recognizing the possibility that these start-ups will grow rapidly and become tomorrow’s superstar firms.

While strengthening competition authorities and regulatory institutions to discipline incumbent firms, a government should also use fiscal policy and support coalition building to make elites contestable. A society’s wealthiest members often use their social and political power to slow creation and preserve the systems that benefit them. Meanwhile, wealth is frequently inherited or acquired through rent-seeking, which does not create and add value to the economy. Instead, it manipulates the social and political conditions of economic activity to distribute wealth upward.

By adopting a progressive income taxation system, countries can compress the after-tax income distribution, reduce inequality, and promote social mobility.\textsuperscript{76} Tax rates that are too high, however, can dampen incentives to undertake high-return, high-risk innovation activities. For example, in response to higher income taxes, innovators or entrepreneurs can reduce their efforts, evade taxes, or migrate to lower-tax localities. Inventors prefer to locate in the same places as other inventors in their specific domain.\textsuperscript{77}

Countries can use inheritance or estate taxes to reduce wealth inequality while financing social protection programs. Progressive inheritance taxes can motivate charitable giving by allowing tax deductions for donations by wealthy individuals—and others—just as progressive income taxes often do. Charitable giving has gained momentum in some middle-income countries, including the BRICs (Brazil, Russia, India, China). And yet in terms of gifts per donor, Asia and Latin America rank the lowest (about US$200,000).

Overall, policy makers in middle-income countries, like those in advanced economies, must strike a fine balance in disciplining economic elites without getting rid of the geese that could lay the golden eggs. What is critical is finding the optimal tax rate that will balance disincentive effects with steps to lower inequality. Governments can also offset some of the disincentive effects of progressive taxation by supporting an enabling innovation environment, with universities, high-quality infrastructure, urban amenities, and direct incentives for innovation (R&D subsidies).
Emerging markets are defined here as countries or territories that have a billionaire but are not one of the high-income member countries of the Organisation for Economic Co-operation and Development (OECD). They are mostly middle-income countries. The data for 2004 and 2014 are from Freund (2016). More recent data are not available.

A study indicates that as of 2014 a substantial share of the extremely wealthy individuals in developing nations had amassed their wealth through inheritance (29 percent), resource exploitation, or preferential government ties and monopolies (16 percent), rather than through genuine productive investments (Freund 2016). More recent data are not available.

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6. de Vries 2006; Dixit and Gill (2024).
12. Sanchez Navarro (2024). On average, BOSs are less productive in terms of revenue per worker, have lower profit margins, and for every dollar in assets in a BOS firm, the return is lower than the median private peer in the same industry.
14. For more information, see Garcia-Brazales (2021) and World Bank (2023a).
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33. World Bank (2024).
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44. Fleysand and Barton (2014).
45. Akcigit and Melitz (2022); World Bank (2020).
47. Verhoogen (2023).
48. Commission on Growth and Development (2008); Dehever, Riaño, and Varela (2020); Dehever et al. (2020); Lovo and Varela (2023).
50. Varela et al. (2022).
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56. Bloom, Draca, and Van Reenen (2016).
60. Iacovone, Rauch, and Winters (2013).
62. Buera and Oberfield (2020); Coe and Helpman (1995); Coe, Helpman, and Hoffmaister (1997); Eaton and Kortum (2001); Hsieh et al. (2019); Rachapalli (2021).
63. World Bank (2023a).
64. See García-Sanchez and Crawley (2024).
65. See Shi, Liu, and Wang (2023) and references therein.
68. Although the Anti-Cartel Enforcement Database covers a much broader time period and 75 countries, complete data for middle-income countries are available only for 34 countries between 2017 and 2022. For more information on the database, see World Bank (2021).
70. These data are based on a sample of 43 high-income countries and 52 middle-income countries and on public information for 2021 or the latest year available (Begazo and Licetti 2024). Statistics on budget exclude Cambodia, Kuwait, and Nigeria, which only publish staff information.
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