

Reversing Productivity Stagnation

KAZAKHSTAN

Reversing Productivity Stagnation

Country Economic Memorandum

Macroeconomics, Trade and Investment Global Practice

Europe and Central Asia Region



CURRENCY AND EQUIVALENT UNITS

(Exchange Rate Effective as of October 31, 2018)

Currency Unit	=	\$US
Kazakhstani tenge (KZT)	=	371.00

WEIGHTS AND MEASURES

Metric system

ABBREVIATIONS

CIS	Commonwealth of Independent States	OECD	Organization for Economic Cooperation and Development
CPSD	Country Private Sector Diagnostic	SCD	Systematic Country Diagnostic
ECA	Eastern Europe and Central Asia	SMEs	Small and Medium Enterprises
ECI	Economic Complexity Index	SOE	State-Owned Enterprise
GDP	Gross Domestic Product	TFP	Total Factor Productivity
		WDI	World Development Indicators

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Executive Summary

After experiencing exceptional economic growth in the 2000s, Kazakhstan's economy has slowed sharply since the global financial crisis, putting development achievements at risk. Strong growth—boosted by rising oil and gas prices, and rapid domestic demand, including soaring investment—drove significant welfare gains, as real wages surged, and inequality and poverty levels declined. Since the global economic downturn, however, Kazakhstan's economic growth has slowed markedly. While the decline in growth mirrors a broader global phenomenon, on a percentage basis Kazakhstan's deceleration has been among the most severe in the world.

The economic slowdown has been caused by sharply lower commodity prices, and structural degradation of the economy. Kazakhstan's growth model has not developed sufficient engines outside of hydrocarbons to buffer against commodity price fluctuations. Accordingly, investment and employment patterns have tended to follow oil price swings, resulting in a shift in resources away from their most productive use during periods of high oil prices. This contributed to a gradual, but cumulatively sizable, weakening of potential output and productivity growth. Policies have also favored the development of non-tradable services over tradable goods, where the scope for productivity gains can be higher.

Kazakhstan's productivity growth has steadily fallen over the past two decades. Productivity was robust in the early 2000s, contributing about 6 percentage points to annual GDP growth. However, by the early 2010s, annual productivity growth had fallen to an average of less than 2 percent; between 2014 and 2016 measured productivity growth turned negative, falling by 2-3 percentage points per year.

Falling within-sector productivity improvements are the driving force behind Kazakhstan's productivity slowdown. Empirical analysis points to *productivity* as the core engine of sustainable long-term growth for Kazakhstan. The sectors most affected by declining within-sector productivity are agriculture, industry and services.

Kazakhstan has not moved toward new, *higher-value* products. As measured through the Economic Complexity Index (ECI), Kazakhstan has not increased the knowledge value of its export base relative to other economies which is found to be a strong predictor of income, since economies grow as they develop deeper knowledge (which is embedded in their products). Kazakhstan's ECI fell between 2009 and 2016, both in absolute and relative terms, from being in the 38th percentile to fall to the 25th percentile. Cross-country benchmarking also suggests that Kazakhstan performs poorly in terms of overall goods market efficiency, intensity of local

competition, extent of market dominance, and prevalence of foreign ownership, ranking 72, 114, 91 and 110 out of 137 countries, respectively.¹

The private sector is significantly constrained and does not exhibit many important features of healthy private sectors worldwide. Empirical evidence suggests that business entry rates are relatively low in Kazakhstan, even controlling for the structure of economy. A few players (mostly SOEs) dominate key product markets, including in backbone services that support the private sector.

The evidence shows that new (and small) firms are more productive than older (and larger) firms. Because of continued protection of inefficient large firms (both SOEs and private firms), the heavy presence of older (and larger) firms in operation suggests that the process of creative destruction, by which less productive firms exit the market, is not fully effective and that many important elements of Kazakhstan's economic transition have not been completed.

Without productivity growth, Kazakhstan will confront ever-declining rates of income per capita. Unless there is a strong productivity growth, diversification and support of the private sector, investment rates would need to increase to infeasible levels (more than 50 percent of GDP in order to reach even 2.5 percent of annual growth in 15 years!) and even then, they will be insufficient to achieve Kazakhstan's long-term growth goal of being in the top-30 most developed countries by 2050.

The corrosive patterns must be corrected to revive productivity, which is essential for higher economic growth—since higher investment cannot substitute for productivity growth in the long run. Prior analytical work confirms that there are significant opportunities for scale economies and productive activity in services, including logistics, finance, communications, and health and education.

Faster productivity growth will require a significant boost to efficiency gains within sectors. Cross-sectoral labor shifts alone will not be sufficient to drive productivity growth since productivity differentials among major sectors are diminishing. Acceleration of productivity growth instead has to come from technological innovation and enhanced within-sector efficiency.

Spurring within-sector productivity calls for economic diversification (less reliance on oil) and removal of fundamental constraints to private sector development. Analysis of enterprise data points to market dominance by large SOEs and a few state-connected private firms. They also describe a private sector where entry of small firms outside low-value services is very limited (even compared to other commodity-exporting countries), where large productive private firms do not exit, and where SMEs face significant operating constraints. The government's unequal regulatory treatment of public and connected private sectors, the extreme level of bureaucracy,

¹ 2018 Global Competitiveness Report.

excessive control of financial markets, and limited dissemination of technology are among the factors that constrain private sector development.

The first policy imperative is to level the playing field for all firms—well-connected or otherwise. This means reforming long-standing structures that protect state-owned and other well-connected firms and handicap new ones. The fact that older, less productive firms are able to stay in business shows that the process of creative destruction—whereby less productive firms exit the market, making room for newer and more productive ones—is not happening. The government needs to revisit the competition policy program to strengthen competition-supporting institutions and fully decentralize the decision-making process to allow for free flow of resources and technology.

The second policy is to strengthen the rule of law and to deal more aggressively and comprehensively with corruption. The judicial system, perceived as a source of negative outcomes due to corruption and the institutional fragility, is seen as one of the biggest barriers to an efficient and highly productive economic system. Also, firms are being severely constrained by the prevalence of corruption.² While the government has a strategy for combatting corruption, the activities associated with the plan do not align with the objectives.³ The inadequate reporting of corrupt practices also hinders authorities' ability to respond. Within the anti-corruption policy program, the government should consider reforming toward transparent public procurement procedures and revise the burdensome and costly trading procedures and a border administration to improve transparency in customs.⁴

Third, the governments will need to introduce structural changes in the economy to boost private investment and reduce a disproportionately large role of the state in the economy. The strong presence of SOEs results in inefficient prices, quota-based production, and a number of other market distortions that serve to suppress the domestic private sector. Reducing the role of the state requires the elimination of private sector distortions and favorable treatment of SOEs. Kazakhstan's productivity dilemma demands it attracts and grow investments outside of oil and extractives, and outside of low-value (non-tradeable) services tied to oil wealth.

To ensure a successful implementation of the above policy options, the government of Kazakhstan—jointly with multilateral institutions—may start by focusing on the following policy actions: (i) develop a framework to establish a regulatory environment that enables SMEs to emerge, grow, and attract FDI, and substantially reduce the state's presence in the economy, (ii) introduce reforms to modernize and transform Kazakhstan's institutions to make them open,

² World Bank Enterprise Survey data identify corruption as the top obstacle to doing business in Kazakhstan across all sectors.

³ With resolution No 234 of 14 April 2015, the government approved its Plan of Activities for 2015–17, which includes, apart from the 64 proper anti-corruption activities, another 65 aiming to counter “shadow economy.”

⁴ Official data show that two of the four most corrupt spheres in Kazakhstan are customs control and tax collection (the others are roads and public procurement). OECD 2014.

adaptable, and effective by applying world's best practices in reducing corruption, strengthening justice institutions, bolstering rule of law, among others, and (iii) implement competition and regulatory frameworks in parallel to international standards (such as OECD) to ensure that privatization processes will reduce concentration of market power rather than simply transfer rents from the public sector to the private sector.

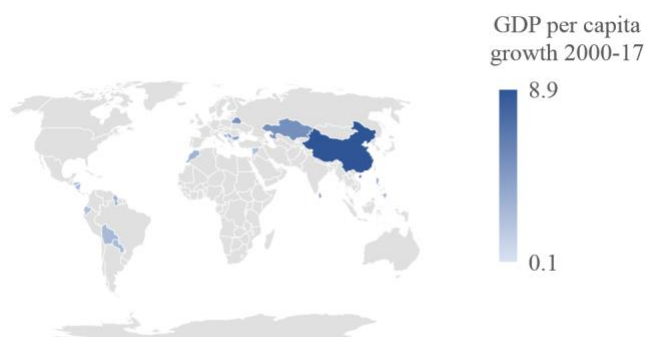
CHAPTER 1. Reversing Productivity Stagnation

A. Growth Dilemma

1. By most comparisons, Kazakhstan's economic performance since 2000 appears to be outstanding.

Between 2000 and 2017, Kazakhstan's economy grew by an annual average of 6.5 percent, faster than that of almost all other Central Asian and CIS economies. Income per capita rose by an annual average of 5.3 percent—a performance exceeded only by China among Kazakhstan's income comparators in 2000 (Figure 1.1).⁵ Driven by oil and pursuing an economic strategy that included structural reforms and the attraction of massive foreign direct investment (FDI) into its oil and gas sector, in less than two decades Kazakhstan was transformed into an upper-middle-income economy.^{6,7}

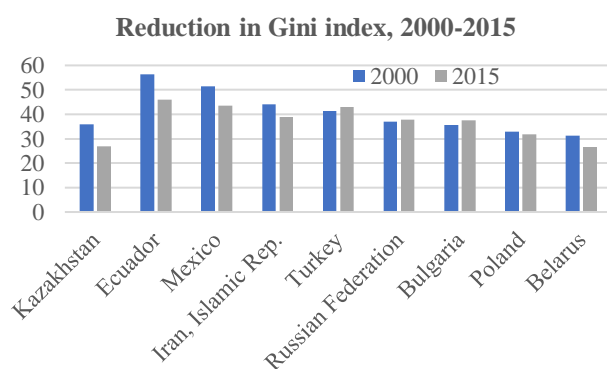
Figure 1.1 Kazakhstan's growth was superior to most income comparators



Source: Staff estimates using World Bank World Development Indicators data.

2. Kazakhstan's strong growth generated widespread benefits; as a result, the country was among the fastest reducers of poverty and inequality in Europe and Central Asia.

Figure 1.2 Income growth fostered greater inclusion



Source: World Bank 2018.

Kazakhstan's growth boom created windows for large income and welfare gains throughout the population. Strong employment growth, particularly in services and industry, supported an almost tripling of real wages between 2000 and 2015. Inequality—as measured through the Gini index—fell from 36 to 27 (Figure 1.2), and poverty (as measured by the \$3.2/day poverty line) was virtually eliminated, dropping from 28 percent in 2000 to 0.3 percent in 2015.⁸ At

⁵ Income comparators reflect economies within 30 percent of Kazakhstan's GDP per capita in 2000.

⁶ The structural reforms included price and trade liberalization and SME enterprise privatization.

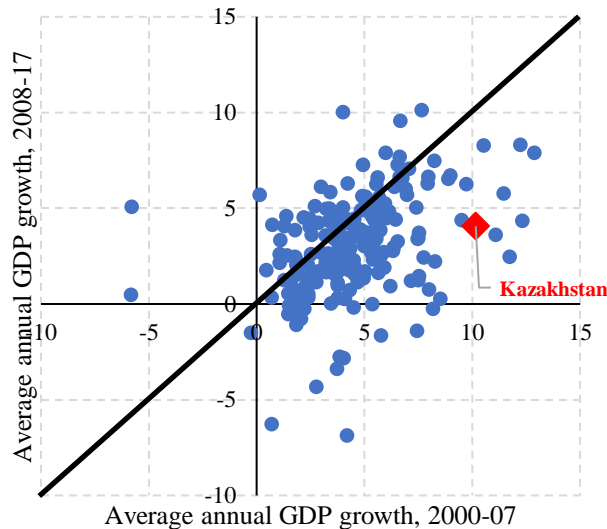
⁷ The years of highest economic growth occurred between 2000 and 2007, after which yearly growth has decelerated sharply.

⁸ World Bank 2018.

the same time, access to basic services expanded and the middle class as a share of the population nearly tripled.⁹

3. **However, Kazakhstan's economic momentum has slowed sharply since the global financial crisis.** The headwinds of the global financial crisis dramatically curtailed the growth trajectory Kazakhstan enjoyed in the early 2000s. Between 2008 and 2017, annual economic

Figure 1.3 Kazakhstan's growth slide has been more severe than most other economies



Source: World Development Indicators database (<http://data.worldbank.org/indicator>), World Bank.

growth averaged 4.1 percent—down from 10.2 percent in the 2000–07 period (Figure 1.3)—owing to the weak external environment, significantly lower oil prices, and lackluster domestic demand. Kazakhstan’s slowdown mirrors a larger global trend. Worldwide, two-thirds of economies have experienced a deceleration of economic growth compared to the early 2000s. However, the severity of Kazakhstan’s slowdown places it among the hardest-hit economies worldwide. On a percentage point basis, the difference between recent growth rates (2008–17) and growth rates achieved through pre-crisis years (2000–07) has been more pronounced in Kazakhstan than in 90 percent of economies.

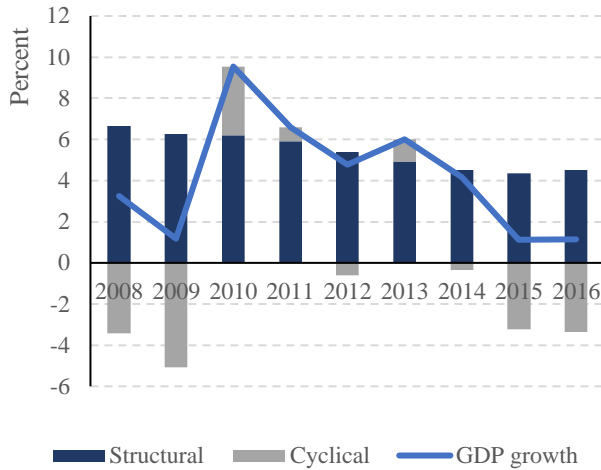
4. **Kazakhstan's recent economic slowdown reflects both a cyclical downturn and longer-run structural shifts.**¹⁰ Commodity prices have fallen sharply from their highs in 2012–13, with the average crude oil price in 2017 about half its 2013 level. While the cyclical overheating and aftermath of the commodity boom have resulted in slower real GDP growth, Kazakhstan’s growth slide also reflects structural elements, with investment and employment shifts arising from the oil price swings contributing to a gradual weakening of potential output.¹¹ Indeed, potential output is estimated to have declined by an average of about 1.5–2.0 percentage points between 2010 and 2016, both overall and within manufacturing (Figure 1.4 and Figure 1.5).

⁹ World Bank 2018.

¹⁰ Cyclical component here captures both the business cycle as well as the cyclical element of oil price changes.

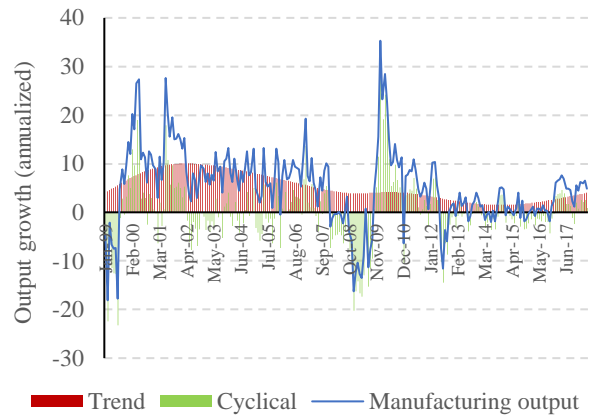
¹¹ While the structural and cyclical components of growth are not directly observable, analysts employ two main techniques to estimate the relative importance of cyclical components in observed growth. One technique employed is statistical, specifically smoothing the data through a Hodrick-Prescott (HP) filter. Also, a production function method can be used to calculate potential output.

Figure 1.4 Potential output growth has fallen



Source: Staff estimates using quarterly GDP data.
 Note: Cyclical component of growth estimated through HP filtering technique.

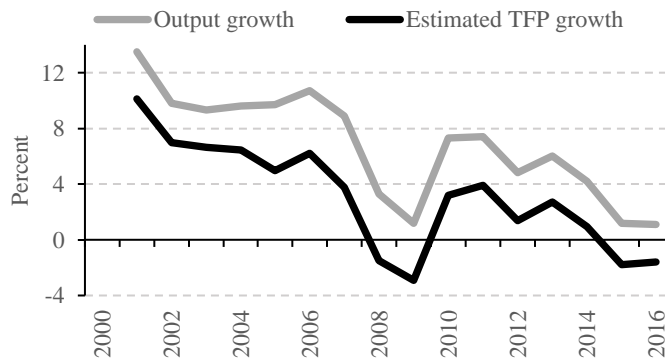
Figure 1.5 Trend output growth in manufacturing has declined



Source: Staff estimates.
 Note: Trend component of manufacturing output estimated through HP filtering technique.

5. Productivity growth is critical for future economic prospects. Kazakhstan’s productivity growth has steadily fallen over the past two decades, suggesting similar investments in productive factors have had progressively lower payoffs (Figure 1.6).¹² These trends are consistent across a range of model assumptions. Kazakhstan’s productivity engine was robust in the early 2000s, contributing about 6 percentage points to annual GDP growth. However, by the early 2010s, annual productivity growth had fallen to an average of less than 2 percent; between 2014 and 2016 measured productivity growth turned negative, falling by 2-3 percentage points per year.¹³

Figure 1.6 The output fall-off has been driven by declining productivity



Source: Staff estimates using country data.
 Note: See Annex 1 for methodology and assumptions in TFP calculations.

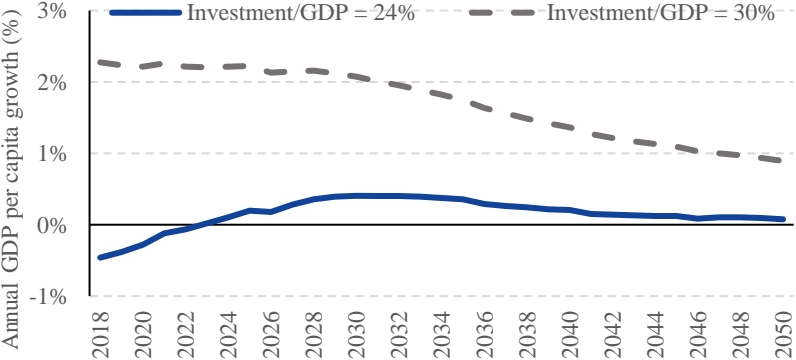
¹² Based on estimates of total factor productivity (TFP) changes using a simple growth accounting framework (Solow model) and accounting for true employment of labor and human capital acquisition.

¹³ Estimates depending upon the precise assumptions on the income share of capital.

6. **Achieving strong productivity growth is critical at this stage of Kazakhstan’s development.** Kazakhstan is now an upper-middle-income economy with well-developed infrastructure and a relatively well-educated labor force. High rates of investment are no longer able to sustain strong increases in income per capita. The reason is simple: with diminishing marginal returns to capital, the impact of a given level of fixed capital formation depends on the size of the existing capital stock. In economies with limited infrastructure and capital goods, a small increase in investment can have a considerable impact on the overall capital stock (thereby raising output). As economies develop and accumulate more expansive networks of infrastructure, equipment, and machinery, these same investments will make only incremental changes to the overall stock of capital (and indeed with depreciation and population growth, a minimum rate of investment is required to maintain existing per capita stocks). For these economies, sustaining growth of income per capita depends increasingly on productivity improvements.

7. **Continued productivity advances could help Kazakhstan to confront the "middle-income trap."**¹⁴ Kazakhstan’s future economic performance will depend increasingly on productivity advances. Without raising productivity, maintaining current rates of investment (gross fixed capital formation) of about 25 percent of GDP would result in only marginal growth in the stock of capital per worker and, as a result, only limited growth of GDP per capita over the next

Figure 1.7 GDP growth will slide further without TFP improvements



Source: World Bank staff estimates from country data.

decade (reaching no higher than 0.4 percent a year).¹⁵

Moreover, beyond a decade, these levels of investment would be insufficient to sustain the capital stock per worker, and income per capita growth rates would decline toward zero (Figure 1.7). Higher rates of investment could forestall the stagnation in the growth

of the per worker capital stock, and thus the income per capita decline, but they cannot eliminate it. Without TFP growth, Kazakhstan will confront ever-declining rates of income per capita growth.

8. **Without strong productivity growth, diversification and support of the private sector, investment rates would need to increase to infeasible levels to achieve Kazakhstan’s long-term growth goals.** For Kazakhstan to achieve income per capita growth rates of even 2.5 percent

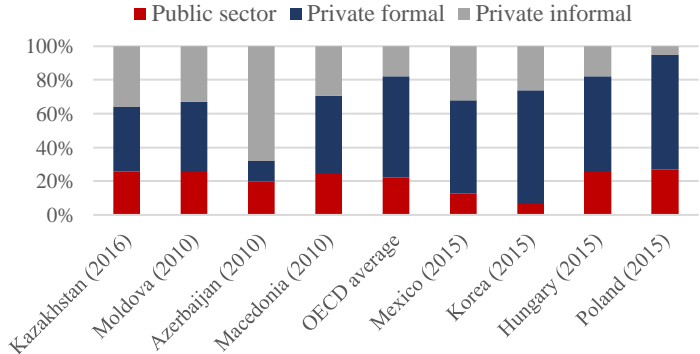
¹⁴ The middle-income trap refers to the need for middle-income economies to transition to different growth strategies based on productivity improvements. See Larson, Loayza, and Woolcock 2016.

¹⁵ GDP per capita growth estimated using the World Bank's long-term growth model.

a year without productivity advances would require investment rates to exceed 50 percent of GDP within 15 years. With the Kazakhstan 2050 Strategy aiming to position the country to be among the 30 top global economies by 2050, the implied income per capita growth would need to be even higher—at least 4 percent a year.¹⁶ Without productivity advancements, the required rates of investment would need to rise to infeasible levels (over 60 percent) within two decades.

9. Raising Kazakhstan’s productivity will require the expansion of a productive and competitive private sector, diversified away from minerals. Kazakhstan’s development model—with increased government participation slowing the transition towards a market economy—has resulted in a small private sector (Figure 1.8). Although the government has implemented numerous policy programs to support the private sector, the efficacy of these efforts has been low due to multiple constraints, including “elite capture.” The government’s unequal regulatory treatment of public and private sectors (and of selected private businesses when compared to those firms not generally affiliated with the government), the extreme level of bureaucracy, excessive control of financial markets, and limited dissemination of technology are among the factors that constrain private sector development.

Figure 1.8 Kazakhstan's private sector is small
Share of public, private formal and informal employment



Sources: Country data; Sattar, Keller, and Baibagysh Uulu 2015.

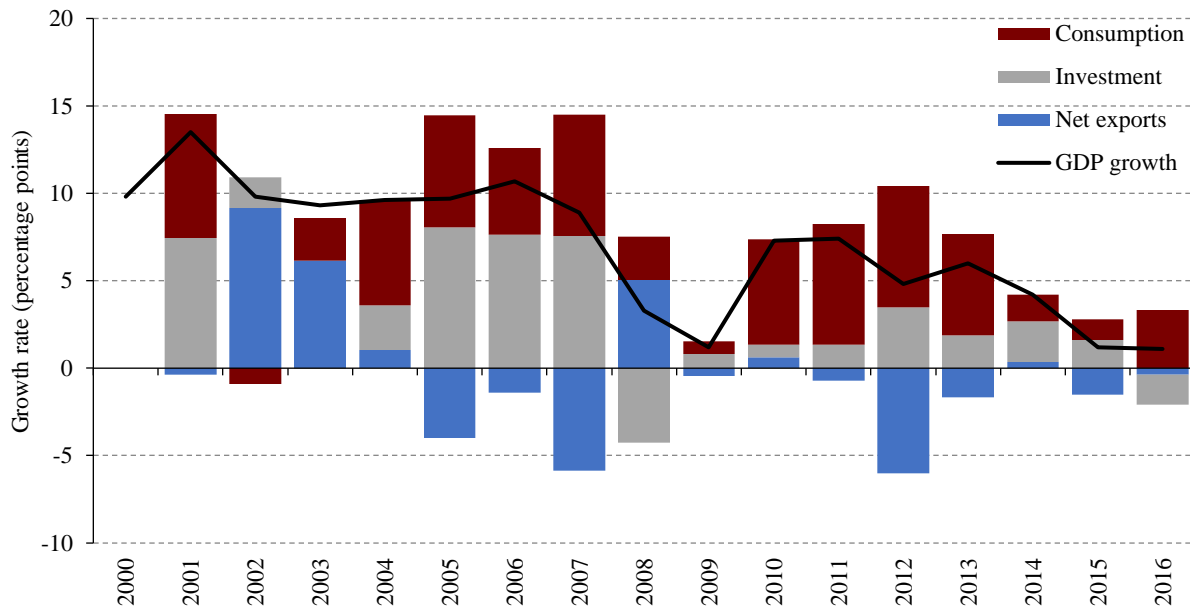
B. Understanding Kazakhstan’s Growth Model and Its Impact on Private Investment and Productivity

10. Kazakhstan’s economic strategy reflects a mix of legacy structures and policies and a heavy reliance on expanding energy production. Kazakhstan faced a difficult transition following independence, with GDP falling by 40 percent between 1991 and 1995, and severe budget and external imbalances leading to hyperinflation. To restore macro-stability and growth, the government focused squarely on attracting FDI into the country's energy and minerals sector.

¹⁶ Assuming annual GDP per capita growth average 2.5 percent by the current highest income economies and 1.5 percent additional income per capita growth for Kazakhstan to “catch up”.

11. Within this economic development strategy, Kazakhstan increased domestic savings sharply. Together with sizable inflows of FDI (which ballooned owing to highly liquid international capital markets), rising domestic savings helped to finance capital accumulation at much higher levels than its comparators. Between 2000 and 2007, Kazakhstan’s fixed investment rate doubled from 18 to 36 percent, fueling an estimated contribution to annual GDP growth rates of more than 5 percentage points (Figure 1.9).¹⁷

Figure 1.9 GDP Growth by Expenditure, 2000–16



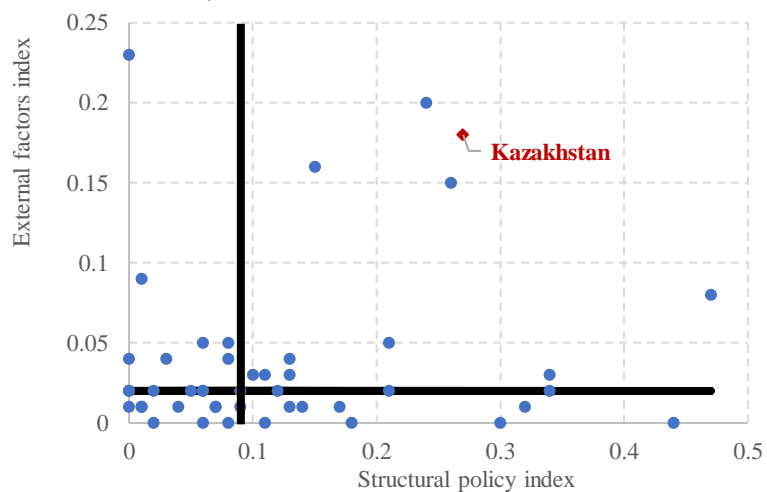
Sources: Statistical Committee of the Republic of Kazakhstan; World Bank staff estimates.

12. The booming oil sector had adverse impacts on the development of other sectors, particularly non-oil tradables. Kazakhstan exhibited many of the core features of “Dutch Disease,” with robust oil revenues contributing to an expansion in domestic demand for non-tradable services (and a consequent rise in wages), an appreciation of the real exchange rate, and a deterioration in the competitiveness of the tradable sectors (manufacturing, in particular). As a result, while the oil sector flourished, the potential export orientation of the non-oil sectors was significantly weakened.

¹⁷ World Development Indicators database (<http://data.worldbank.org/indicator>), World Bank.

13. **Expanding oil production and the commodity price boom provided the stimulus for aggregate demand, while large-scale investments and limited structural reform magnified the growth response.** In finance, the banking system was partially privatized and streamlined, improving the access of credit to companies and individuals.¹⁸ Competition was partially opened in the telecom industry—with new companies entering the long-distance and international markets—expanding telephone coverage.¹⁹ Most importantly, large infrastructure projects (including for the oil and gas industry and the construction of a new capital city in Astana) provided collateral benefits for business. Recent research on the drivers of growth in Europe and Central Asia suggests that the structural change element (mostly related to expanded access to infrastructure, including telecommunications) was even more critical to Kazakhstan’s economic performance than the international commodity price boom (Brueckner and Hansl 2016).²⁰ The contribution to economic growth from these structural changes was 2.7 percentage points annually, only slightly less than the contribution from favorable external conditions of 2.8 percentage points (Figure 1.10).

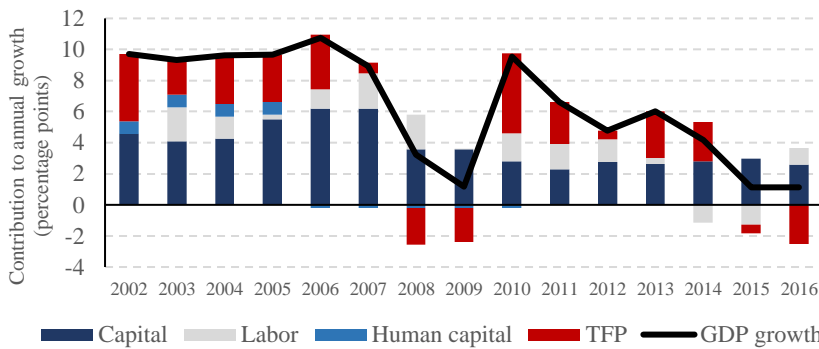
Figure 1.10 Drivers of Economic Growth, External Factors versus Structural Reforms, 2000–10



economy's overall competitiveness. Increased government participation in the economy has slowed Kazakhstan's transition towards a market economy and resulted in an underdeveloped private sector.

15. After yielding early gains, Kazakhstan's development model has come under increasing stress (Figure 1.11). Various measures of Kazakhstan's productivity provide a consistent picture of a severe downswing that began with the global economic crisis, but from

Figure 1.11 Annual GDP Growth Decomposition by Factors of Production, 2002–16



Sources: Statistical Committee of the Republic of Kazakhstan; World Bank staff estimates.

which the country has not fully recovered. A growth accounting perspective—taking into account employment and human capital acquisition—points to very strong productivity growth during the early 2000s, followed by productivity declines in the 2008–09 period, a productivity resumption (at a much lower level) in 2010–13, followed by declining productivity in recent years. These results are robust to a variety of specifications of the production function, and trends in labor productivity—measured by output per worker—also suggest a continuing productivity decline.²³

16. In addition to declining productivity, there has been a significant drop-off in investment, and to a lesser extent employment growth. FDI inflows dropped dramatically following the global financial crisis, and there was also a considerable unwinding of public investment that had surged during the first oil boom in the early 2000s—a slide that was not buffered by private investment. Both factors pushed down gross fixed capital investment over the decade—from a peak value of around 30 percent of GDP in 2007 to about 22 percent in 2016—contributing to a steady decline in the contribution of the capital stock to economic growth. On the labor side, despite rising rates of employment, declining rates of labor force participation resulted in reduced labor contributions to economic growth, first waning and eventually turning negative. In total, the contributions of capital and labor to economic growth almost halved between the 2000–07 period and the 2014–16 period.

²³ See Annex 1 for a description of the growth accounting model assumptions used.

Box 1.1 Estimation of Determinants of Economic Growth in Kazakhstan, 2005–10

Brueckner and Hansl (2016)^a assess the determinants of economic growth in Kazakhstan. The econometric model builds on the work of Loayza and others (2005) and Araujo and others (2014). The change in the natural logarithm of real GDP per capita between two periods is related to the lagged level of the natural logarithm of GDP per capita and a set of growth determinants, X :

$$(1) \ln y_{ct} - \ln y_{ct-1} = \varphi \ln y_{ct-1} + \Gamma \ln(X)_{ct} + a_c + b_t + \varepsilon_{ct}$$

where $\ln y_{ct} - \ln y_{ct-1}$ is the change in the natural logarithm of real PPP GDP per capita in country c between period t and $t - 1$; $\ln y_{ct-1}$ is the natural logarithm of real PPP GDP per capita of country c in period $t - 1$; a_c and b_t are country and time fixed effects; and ε_{ct} is an error term.

The vector of growth determinants, X_{ct} , includes the natural logarithms of secondary enrolment, the GDP share of domestic credit to the private sector, trade openness, the GDP share of government consumption, telephones lines per capita, inflation, the real exchange rate, an indicator of systemic banking crises, and the growth rate of the terms of trade. Additional variables that were included in X_{ct} were the *Polity2* score, which is a measure of the degree of political competition and political constraints, as well as the growth rate of an international commodity export price index that captures windfalls from international commodity price booms.

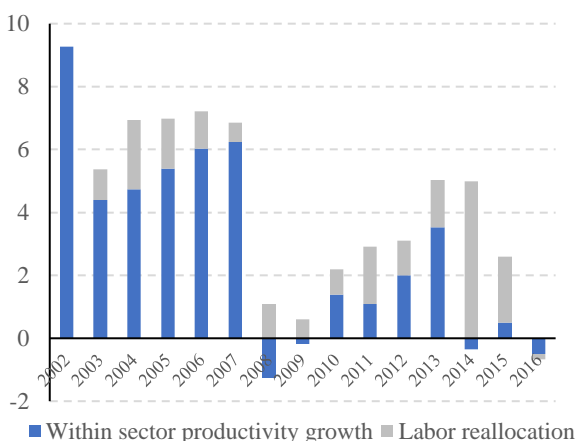
A system-GMM estimation was undertaken, instrumenting endogenous variables with their lags. The baseline econometric model was estimated for 5-year non-overlapping panel data, which better smoothed variations in the business cycle, over a sample of 126 economies for the period 1970–10.

The results of the model allow to estimate—for each economy and period—the proportion of GDP per capita growth attributable to (i) persistence (lagged log GDP per capita); (ii) structural reforms (secondary enrolment, share of domestic credit to the private sector, trade openness, the GDP share of government consumption, political institutions, and telephone lines per capita); (iii) external conditions (terms of trade index, international commodity export price index); and (iv) stabilization (inflation, the real exchange rate, growth of the terms of trade, and the banking crisis indicator).

a. While the paper's primary focus is on the Russian Federation, it uses comparator groups that include Kazakhstan and other advanced natural resource exporting economies, as well as several ECA countries and BRICs.

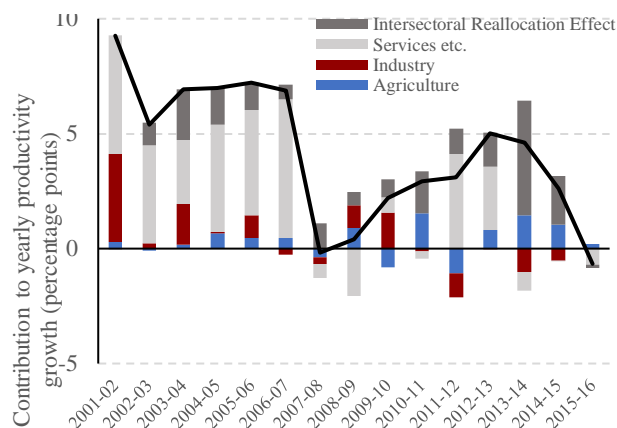
17. Falling within-sector productivity improvements are the driving force behind Kazakhstan's productivity slowdown. The sectors most affected by declining within-sector productivity improvements are agriculture, industry, and services.²⁴ The bulk of the overall increase in labor productivity in Kazakhstan in the early 2000s was owing to within-sector productivity growth. Until 2008, about 85 percent of the growth in output per worker came from productivity improvements within sectors, primarily (non-tradable) services, which saw a run-up in both prices and domestic demand with the commodity boom (Figure 1.12). Labor reallocation across sectors also contributed to productivity growth but at a much-reduced level. The global economic slowdown, however, had a pronounced effect on both the scale and nature of labor productivity growth in Kazakhstan. Since 2010, within-sector productivity improvements have been muted, with a collapse in productivity growth in the services sector and negative productivity growth in the industrial sector (Figure 1.13).

Figure 1.12 Within- and Between-sector Contributions to Annual Productivity Growth



Sources: Statistical Committee of the Republic of Kazakhstan; World Bank staff estimates.

Figure 1.13 Sectoral Contributors to Annual Productivity Growth, 2001–16



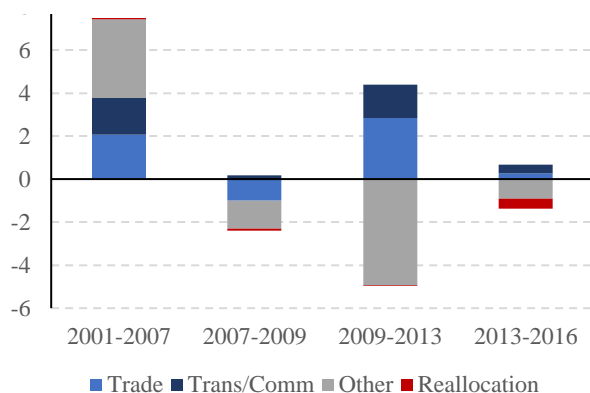
Sources: Statistical Committee of the Republic of Kazakhstan; World Bank staff estimates.

18. Resource shifts to lower-value activities have hindered within-sector productivity improvements. Part of the fall-off in within-sector productivity has come from a gradual expansion of activities at the lower end of the productivity spectrum. Just as cross-sector labor movements can boost overall productivity, productivity within a sector can be aided (or hindered) by these same shifts. The share of industrial workers engaged in manufacturing dropped from 42 percent in 2003 to 32 percent in 2016; these workers were almost fully absorbed in low-value

²⁴ The technique used to analyze the sectoral components of labor productivity—Shapley decomposition—breaks down aggregate labor productivity into two main components: (i) the “within” effect, which captures the impact of productivity growth within individual sectors; and (ii) the “between” effect (or reallocation effect), which reflects the impact of a shift in the growth of employment towards sectors that are more productive, or the reallocation of workers from less productive to more productive sectors.

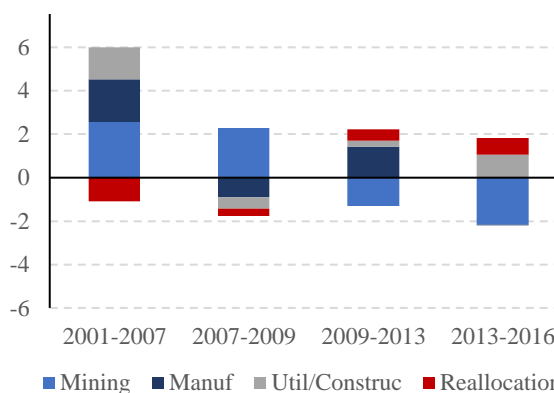
construction. In services, over the same period, resources moved out of higher value-added services (such as transport and communications) into lower-value services.

Figure 1.14 Decomposition of Productivity Growth, Services



Sources: Statistical Committee of the Republic of Kazakhstan; World Bank staff estimates.

Figure 1.15 Decomposition of Productivity Growth, Industry



Sources: Statistical Committee of the Republic of Kazakhstan; World Bank staff estimates.

19. Down-shifts on the productivity ladder reflect both demand-side and supply-side components. The expansion of jobs at the low-value end of the spectrum follows a pattern common to natural-resource-based economies—where revenue inflow bids up demand for non-tradables at the expense of other exportable goods (manufactured goods, for example). However, this shift also reflects the supply-side characteristics of Kazakhstan's private sector, where it is considerably easier for businesses to enter and operate at the low end of the value-added spectrum as firms face greater obstacles to doing business in high-value industries. To ensure higher productivity growth within sectors, understanding the main constraints facing both existing and potential investors in entering and operating in higher-value industries will be critical.

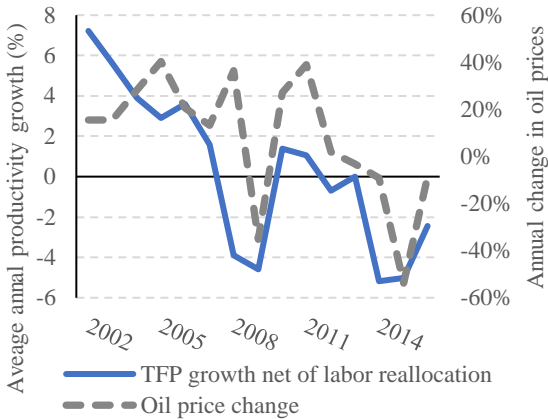
20. The modest productivity growth recorded in Kazakhstan is largely attributable to commodity price gains rather than true efficiency gains.²⁵ Even though oil accounts for only 20-30 percent of GDP, positive shocks to oil prices have driven up aggregate demand (and prices) for non-tradables, distorting real output and productivity estimates in other sectors.²⁶ Figure 1.16 highlights the close correlation between world oil prices and TFP, which has only increased in recent years. A decomposition of real output growth since 2000—separating out oil price fluctuations from volume changes, as well as non-oil price changes—suggests that while the much of the recent deceleration of economic growth has come from weakened oil prices, in earlier periods economic growth was mostly driven by the boom created outside of oil. Breaking the

²⁵ Because Kazakhstan's productivity growth will come less from across-sector employment growth changes than from within-sector efficiency gains, it is useful to net out labor movements from total factor productivity to give a clearer picture of Kazakhstan's efficiency.

²⁶ The exact proportion of total output depends heavily on the oil price (along with production, which is relatively stable).

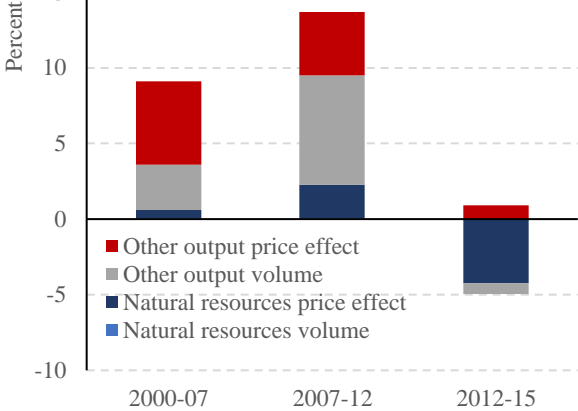
commodity price cycle requires the acceleration of private investment in productive industries that are not tied to the performance of the oil and minerals sectors.

Figure 1.16 Movements of Within-sector TFP and Oil Prices, 2002–16



Source: Statistical Committee of the Republic of Kazakhstan; World Bank staff estimates.

Figure 1.17 Decomposition of GDP Growth in Kazakhstan, 2002–16

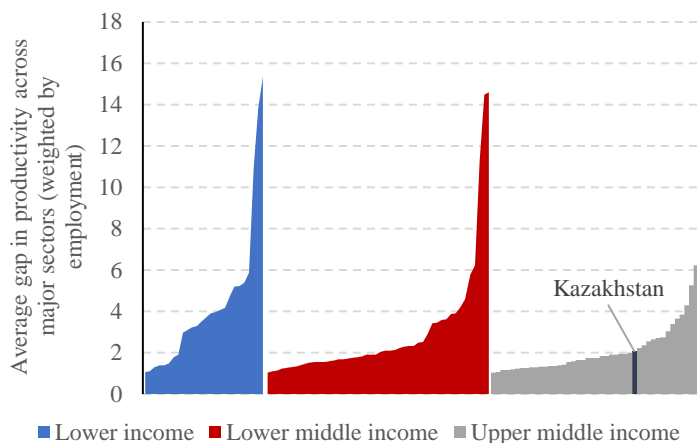


Source: Statistical Committee of the Republic of Kazakhstan; World Bank staff estimates.

21. Cross-labor reallocation has boosted TFP. Efficient channeling of labor to more productive sectors can lift TFP, as workers migrate toward more productive activities from less productive ones. These shifts can happen across major sectors, within sectors, and even within firms. One source of early productivity dividends for developing economies is the cross-sectoral (agriculture, industry, services) shift in employment creation, away from (typically) agriculture to services and industry. Kazakhstan has benefited from that initial shift, with the share of workers in agriculture declining from 29 in 2009 to 18 percent in 2016 as labor moved to urban areas and into the services sector, where most of Kazakhstan’s net job creation has occurred, as rising oil prices bid up demand for non-tradables. This shift provided a significant boost to productivity growth, of 1 percentage point a year on average.

22. Cross-sector labor reallocation will yield fewer productivity gains as Kazakhstan continues to advance toward higher-income status. While labor reallocation across major sectors is a driving force in productivity improvements at lower levels of income, as economies grow the gap between productivity levels across sectors generally diminishes, and there are fewer productivity gains to be had from employment share movements across major sectors (Figure

Figure 1.18 Potential Productivity Gains from Labor Reallocation: Weighted Gaps in Sectoral Productivity Levels, 2016



Source: World Bank staff estimates.

1.18). With a sizeable employment share in agriculture, Kazakhstan can and should continue to exploit the productivity dividends from the resource shift toward industry and services. However, its main source of productivity growth will increasingly need to come not from labor movements across sectors but from productivity growth within sectors (both from within-sector labor movements and from within-industry efficiency gains), through diversification into new activities.

23. The economic growth model of the 2000s faces increasing signs of stress. Improvements in productivity supported by structural shifts—namely a more productive, competitive private sector—are vital for sustainable growth. Real output growth averaged close to 10 percent a year in 2001–06, buoyed by a more than doubling of real oil prices over the period. While favorable terms of trade permitted widescale investment in physical capital, TFP advances were an important driver of Kazakhstan’s overall economic growth. In the early 2000s, a shift out of low-value agriculture coupled with productivity gains within sectors boosted output per worker growth. These within-sector gains were supported by massive *public* investment in critical infrastructure, which generated significant growth. As oil price rises eased and ultimately reversed, productivity has become a drag on economic growth. Labor has moved toward lower-value activities, worsening the productivity growth slowdown. Job growth within the industrial sector has also occurred at the low end of the productivity spectrum. At the same time, there has been a significant drop-off in investment. These dynamics raise the *importance of structural shifts* by developing a productive and competitive private sector for sustainable long-term growth.

C. The Role of Public Policy in Kazakhstan’s Productivity Stagnation

24. The extensive presence of state-owned enterprises (SOEs) undermines Kazakhstan’s productivity. Partly driven by oil wealth, a vast SOE sector that manages most of the formal economy has developed over the last two decades. The largest state holding company, Samruk-Kazyna (SK) accounts for nearly 30 percent of total employment.²⁷ SOEs that comprise the holdings of SK and Baiterek (the second largest conglomerate) are among the 300 largest taxpayers

²⁷ World Bank 2017. The assets of Samruk-Kazyna alone are equivalent to 50 percent of GDP.

in Kazakhstan. The state's presence in the economy has significantly influenced its development path by hindering private sector growth and constraining productivity.

25. The state is involved in all network sectors, with SOEs being able to influence policies and competition in individuals sector and economywide.²⁸ SOEs have a heavy presence in key services sectors—more than half of all SOEs are in information and communications technology (ICT), transportation, professional services, electricity, water supply and sanitation, education, and health. SOEs impact not only through their direct presence, but also through their ability to influence policy—through, for example, their privileged access to government, which participates directly in their management. The authorities have provided substantial support to banks via deposit placements, subsidizing lending programs, and bailouts, including via the national pension fund.²⁹

26. Since the 2000s Kazakhstan's macroeconomic policies have resulted in economic incentives that favor the development of non-tradable services. The growth of nonfinancial services has outpaced that of manufacturing, especially during the years of the high non-oil deficit (2008–14). Moreover, the bulk of job creation in 2003–13 was in services, particularly in construction, trade, transport, education, and health. Kazakhstan's economic structure has become reliant on nonrenewable commodity sectors—which are capital intensive and subject to adverse economic shocks—and low-productivity services. Jobs have transitioned out of low-productivity agricultural activities into services sectors with low productivity profiles.

27. The government's macroeconomic policies in response to oil price shocks proved to be inconsistent and costly. Following the 2014-15 oil shock, the government responded first with countercyclical macroeconomic policies.³⁰ Attempts to defend the peg of the Kazakhstan tenge to the U.S. dollar required the authorities to inject more than \$30 billion in foreign-currency interventions in 2014–15.³¹ In 2015, in conjunction with a tightening of monetary policy, the government allowed the tenge to float. By 2017 the government had shifted toward a policy of fiscal consolidation by lowering public spending to about 20 percent of GDP from 2018 onwards.

28. Macroeconomic policies should focus on ensuring long-term sustainability through increased buffers and a reduction of the non-oil deficit. Reduced support for SOEs and strengthening of bank supervision to avoid the repeated re-capitalization of failing banks will also be critical. Low productivity is partly explained by fundamental macroeconomic challenges which need to be addressed consistently. The government should implement additional measures to raise non-oil revenue—by eliminating inefficient tax expenditures and benefits and further improving

²⁸ World Bank 2018a. Network sectors refer to transport, ICT, utilities, logistics, and so on.

²⁹ IMF 2017.

³⁰ World Bank 2018b.

³¹ World Bank 2017.

tax administration, for example—and to strengthen monetary transmission mechanisms to support private sector growth.

D. Challenges to Stronger Productivity Growth

29. Kazakhstan's productivity challenge is not just to raise productivity but to ensure more stable productivity growth. Kazakhstan's productivity challenge differs from many other economies, which seek to raise persistently low productivity levels, or which aim to move up a value chain to sustain productivity growth rates. Kazakhstan's growth model has delivered exceptional welfare and income gains, but it has not developed sufficient engines outside of the hydrocarbons sector to buffer the economy against commodity price declines.

30. Enabling higher-productivity firms to expand and create jobs depends on several factors: some intrinsic to and under the control of the firm, but others external to the firm, including regulations and policies that create an enabling environment for businesses. Firm-level analysis can provide important insights on policies that have differentiated impacts across the business sector (for example, policies that depend on firm size or location). However, because businesses within an economy are often operating under similar macroeconomic policies and regulations, it is often difficult to gauge the productivity impacts of specific policies.³² Even cross-country analysis is challenged to disentangle the mechanisms by which a private sector becomes a reliable and robust engine for productivity improvements.

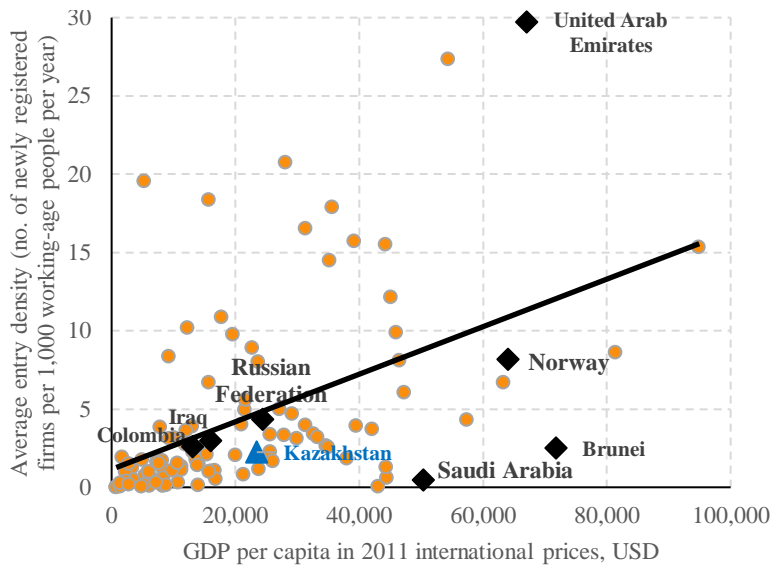
31. Kazakhstan's private sector does not exhibit many of the key qualities of healthy private sectors worldwide. Some fundamental features are: (i) strong entry and exit of firms (across a range of industries), (ii) limited market dominance across sectors, (iii) entrepreneurship, through the discovery of new products and markets, (iv) diminishing productivity deviation among firms within sectors (technology spillovers). While productivity deviations among firms over time cannot be adequately assessed (even with the firm-level data that is available), it is possible to assess Kazakhstan's performance along the other three metrics. Available data suggest rates of entry are relatively low, even controlling for the structure of the economy. A few players dominate key product markets, including in backbone services that support the private sector. There has been limited expansion into new export products, but the complexity of the expanded export base has declined.

³² That is not always the case, and enterprise analysis seeks to determine how differentiated policy impacts both productivity and growth.

32. Business entry in Kazakhstan is low, even compared to other commodity exporters.

Business entry and exit is an important source of innovation and a major contributor to productivity. In a process known as creative destruction, economy-wide productivity gains can be

Figure 1.19 New Business Entry and GDP per Capita, 2016



Source: World Bank staff estimates.

economies exhibit significantly lower rates of business entry, hinting at the impacts of weakened competitiveness beyond oil and gas. Kazakhstan (and other CIS economies) also carry a legacy of central planning, where industrial configuration has been determined by administrative directive rather than market forces and performance. Kazakhstan's rate of business entry about half that of non-oil economies of similar income per capita levels (Figure 1.19). Even among oil economies, business entry is off-pace.

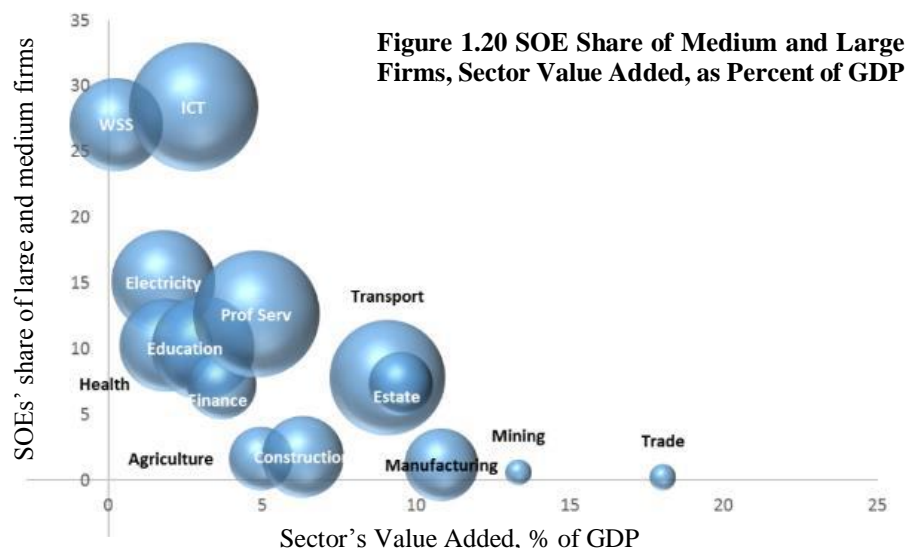
33. Relatively few firms dominate Kazakhstan's product markets. The market dominance applies not only to important state industries but also to backbone services critical to business performance such as telecommunications and financial services. As a major holding company with more than 600 subsidiaries, Samruk-Kazyna (SK, the sovereign wealth fund), for example, controls not only the oil and gas sector but also the provision of public services in transportation and ICT.³⁴ The banking sector is heavily concentrated in five large banks that control about 60 percent of banking assets.³⁵ With a lack of competition in local markets and limited potential for imports, this results in higher prices for key intermediate inputs for the private sector and lowers the competitiveness of Kazakh businesses relative to foreign rivals.

³³ For U.S. data, see Foster, Haltiwanger, and Krizan (2001); for Chinese data, see Brandt, Van Biesebroeck, and Zhang (2012).

³⁴ For more information, see the [Kazakhstan Country Commercial Guide 2016](#).

³⁵ Kazakhstan Country Commercial Guide 2016.

34. **Cross-country benchmarking suggests that Kazakhstan performs poorly when compared to peer economies.** According to the 2018 Global Competitiveness Report, Kazakhstan is ranked 72 out of 137 economies regarding overall goods market efficiency. Areas where Kazakhstan ranks particularly poorly include the intensity of local competition (where Kazakhstan ranks 114 worldwide), extent of market dominance (91) and prevalence of foreign ownership (110). Compared with economies of similar GDP per capita (including Brazil, Malaysia, Panama, and Russia), Kazakhstan's market dominance is high. An estimated 10 percent of markets have monopolistic or duopolistic market structures and only 44 percent of the firms surveyed compete against a large number of firms.³⁶



Source: World Bank 2018a.

Note: The size of a balloon represents the share of SOEs in the sector (as a share of total number of firms). For instance, ICT, the largest bubble, accounts for 12 percent of all SOEs in the sectors shown.

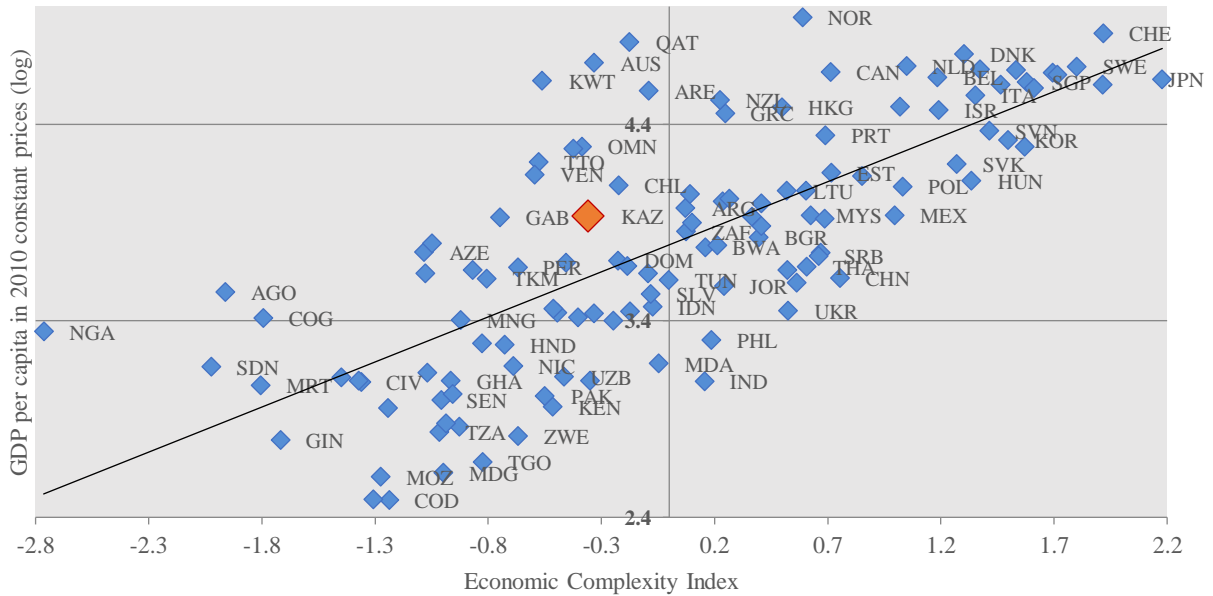
35. **Kazakhstan has not moved toward new, higher-value products.** Relative to other economies, Kazakhstan has not increased the knowledge value of its export base as measured through the Economic Complexity Index (ECI).³⁷ Economic complexity has been found to be a strong and significant predictor of income. Indeed, economies grow as they develop deeper knowledge (which is embedded in their products). Kazakhstan's ECI fell between 2009 and 2016, not only in absolute terms but also in relative terms. In 2009, Kazakhstan ranked in the 38th percentile globally in terms of the degree of economic complexity of its product base (Figure 1.21), but by 2016 it had fallen to the 25th percentile (Figure 1.22). There is a firm relationship between ECI and income level, and the degree to which an economy's ECI is higher or lower than predicted, given its income level, can be an important indicator for future growth. Economies with economic

³⁶ World Bank 2016.

³⁷ The ECI measures the relative knowledge content of an economy's exports through an assessment of the relative ubiquity of an economy's exports (how many other economies are able to produce and successfully export the same products) as well as the relative diversity of goods it exports competitively. The index controls for country diversity and product complexity. For additional information on the ECI, see Hausmann and others 2014.

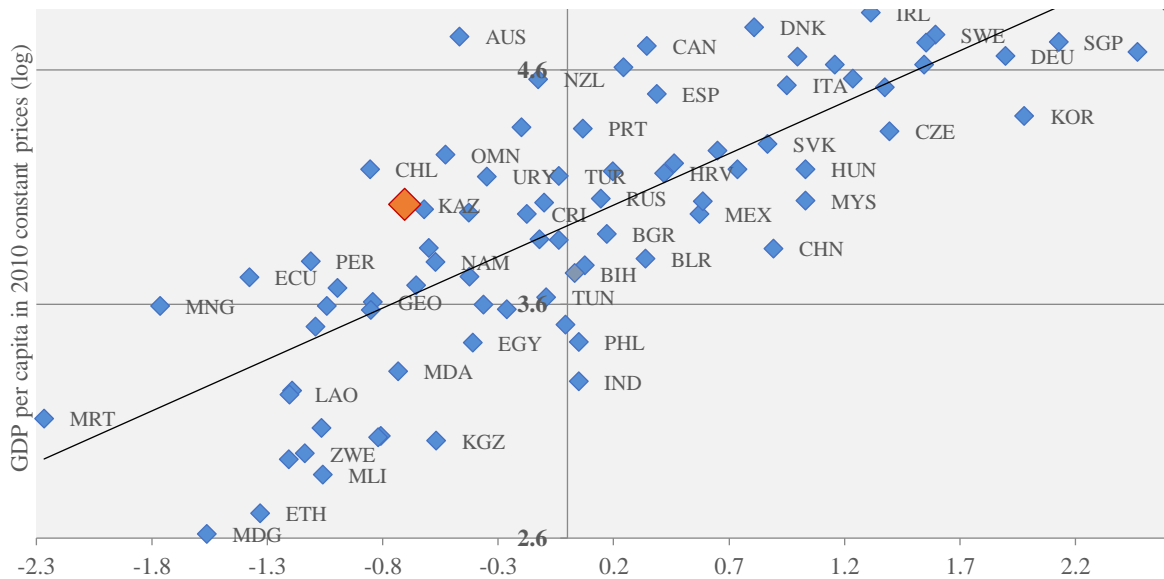
complexity that is greater than predicted, given their level of income (India and Mexico, for example), tend to grow faster than those that are "too rich" for their current level of economic complexity (including Kazakhstan).

Figure 1.21 GDP per Capita and Economic Complexity, 2009



Source: World Bank staff estimates.

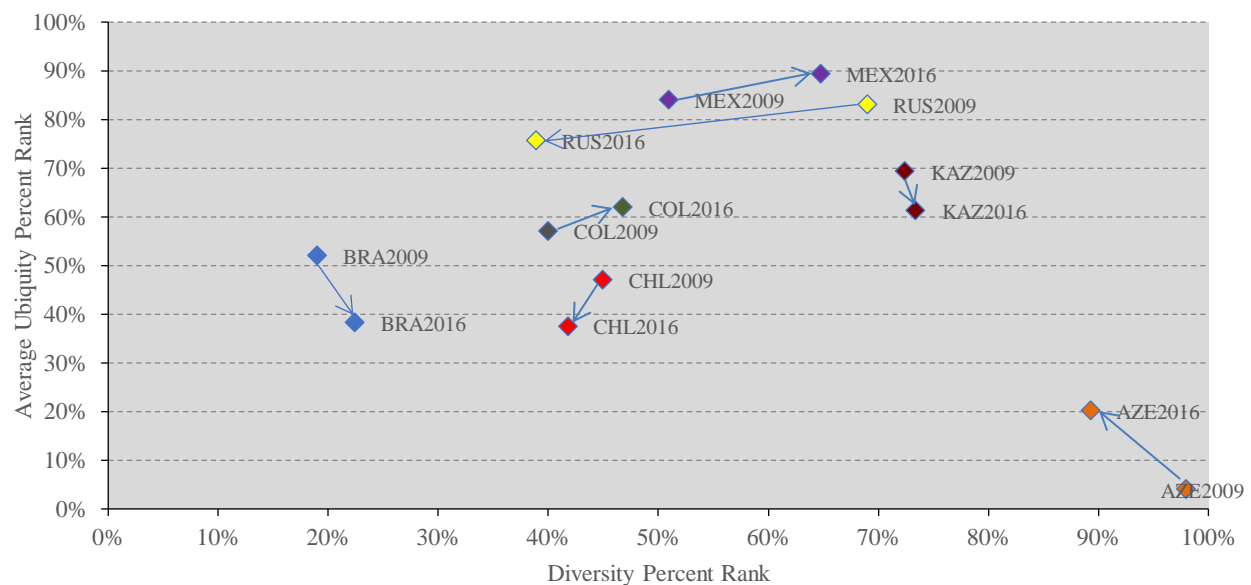
Figure 1.22 GDP per Capita and Economic Complexity, 2016



Source: World Bank staff estimates.

36. **Kazakhstan has introduced new products, but they are “prevalent” exports.** Economic complexity is a function of *both* the diversity of products an economy can successfully export and the ubiquity of those exports (how common its exports are worldwide). Thus, economic complexity can shift over time because of changes in the number of products an economy is able to successfully export (diversity) or because the products it exports are less common worldwide (signaling a more specialized capacity to deliver the product). Between 2009 and 2016, Kazakhstan expanded the range of products it successfully exported, but its overall export basket became more common (Figure 1.23). Exporting less ubiquitous products implies more sophisticated knowledge and technology (that fetches higher rewards); this has significant implications for productivity and economic growth.

Figure 1.23 Kazakhstan and Comparators, Diversity and Average Ubiquity, 2009–16



Source: World Bank staff estimates.

37. **Delinking Kazakhstan’s productivity patterns from oil price fluctuations will require fundamental shifts to encourage a more dynamic, diversified, and productive private sector.** Macroeconomic data suggest the private sector is hindered by constraints including barriers to entry, large enterprises controlling product markets, and an inability to develop in new products or markets. As a result, productivity gains in Kazakhstan have diminished, with a continuous shift of workers to lower-end activities within each sector driving a significant drop-off in within-sector productivity gains.

38. **Five common features characterize economies that were able to graduate from middle-income status to developed economy status by maintaining long-term economic growth.**³⁸ Such economies have (i) fully exploited the world economy; (ii) maintained

³⁸ World Bank 2008. Kazakhstan’s peers identified in the paper are: Hong Kong SAR, China; Japan; Republic of Korea; Malta; Singapore, and Taiwan, China.

macroeconomic stability: (iii) achieved high rates of savings and investment; (iv) allowed markets to allocate resources; and (v) had committed, credible, and capable governments. Put more simply, these economies became fully open to the world economy allowing for free flow of information and technology (for example, via FDI channels), strictly maintained the credibility of monetary and fiscal authorities regardless of external economic shocks, and, most importantly, nurtured an environment governed by market rules which allowed for the proper *decentralized* allocation of resources. All of these allowed for rapid increases in productivity growth that fueled overall economic growth.

39. Careful government intervention is needed to reveal Kazakhstan's comparative advantages. Some of the economies mentioned above were more interventionist than others, but they took this approach *only* for the purpose of retrieving the best allocation scenarios for their existing endowments of labor, natural resources, and capital that altogether dictate their comparative advantage. Kazakhstan will need to discover its comparative advantages beyond oil, but this will require only a limited presence of the state in the decision-making process. From the successful economies' experience, what was unhelpful was a government push to promote heavy industry before accumulating the capital required to make it viable.³⁹

³⁹ World Bank 2008.

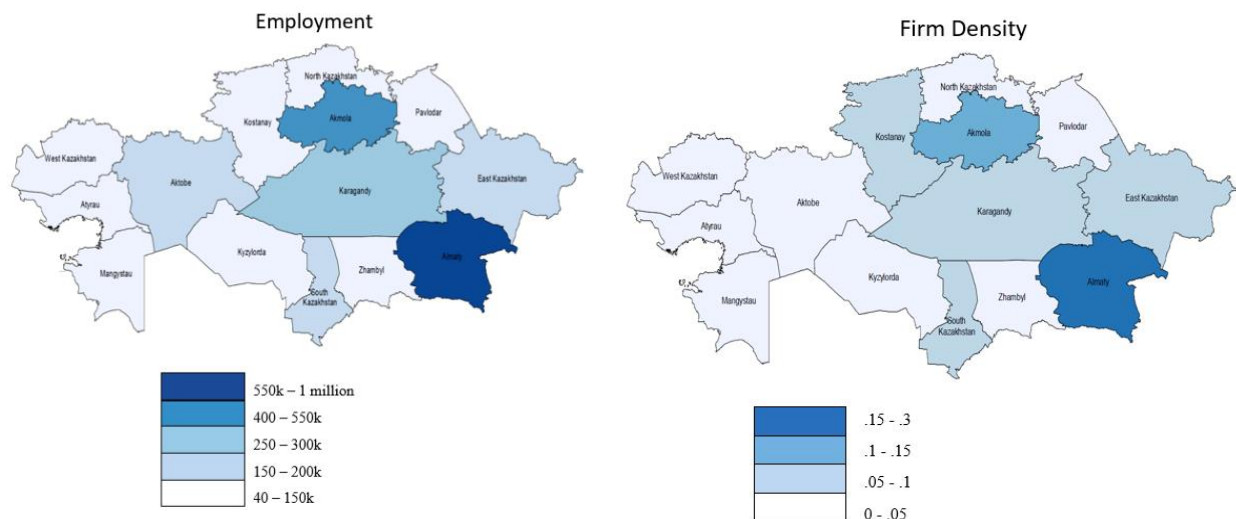
CHAPTER 2. A Deeper Look at Private Enterprises

40. **Aggregate findings on productivity mask significant heterogeneity among industries and individual firms.** Looking at the performance of individual firms is useful when seeking to understand the constraints that drive Kazakhstan's productivity patterns at the macroeconomic level. This chapter draws upon firm-level data to present a clearer picture of Kazakhstan's enterprise sector, with a view to better understanding the features associated with performance and productivity.

A. Firm and Employment Structure

41. **A heavy regional concentration of activity characterizes Kazakhstan's enterprise sector.** Two oblasts—Almaty and Akmola—have a high concentration of firms, with a firm density about four times that of Kazakhstan's other 12 oblasts, on average (Figure 2.1). These regions, containing the cities of Almaty and Astana, account for about 40 percent of all jobs nationally. Other oblasts account for substantially less employment in the economy (save the Karagandy oblast, a mining town located between Almaty and Akmola which benefits from travel between the two main cities).⁴⁰

Figure 2.1 Geographic Concentration of Firms and Employment in Kazakhstan, 2012



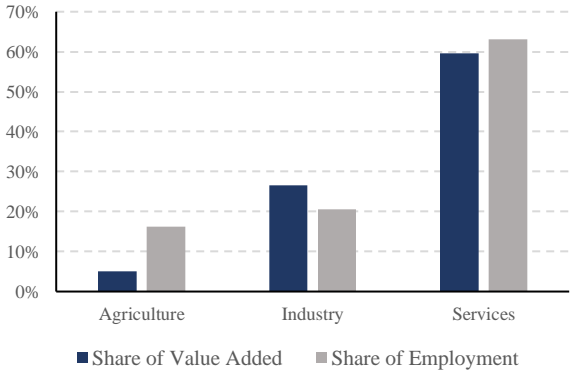
Source: Duparcq and Konings 2016.

42. **Services are the main contributor to both national output and employment in Kazakhstan.** In line with the average for other upper-middle-income economies, the services

⁴⁰ Duparcq and Konings 2016.

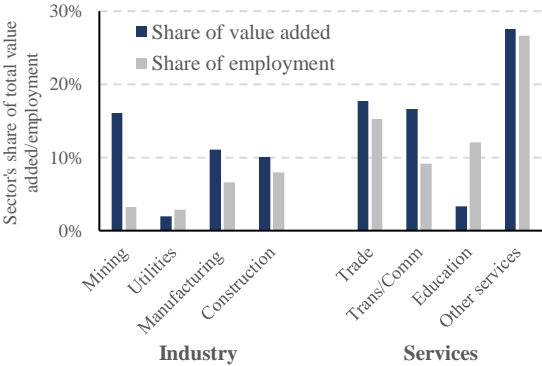
sector creates around 60 percent of value added and employment. Industry generates 30 percent of value added, but only 21 percent of employment (making it the most productive sector), while the agriculture sector is the lowest-value sector, accounting for only 6 percent of output but 16 percent of jobs (Figure 2.2). The labor-intensiveness of specific industries within major sectors varies greatly—mining is highly capital intensive (contributing the bulk of industrial output, but few jobs) while construction is a significantly more labor-intensive industry (Figure 2.3). Services, on the whole, are less productive and more labor-intensive, particularly the education and “other services” sectors.

Figure 2.2 Distribution of Value Added and Employment, by Major Sector, 2016



Sources: Statistical Committee of the Republic of Kazakhstan; World Bank staff estimates.

Figure 2.3 Distribution of Value Added and Employment, by Sub-sector, 2016



Sources: Statistical Committee of the Republic of Kazakhstan; World Bank staff estimates.

43. **Using ORBIS data to examine employment distribution provides a sense of employment in small firms across sectors.**⁴¹ ORBIS survey data focuses only on larger businesses. Where ORBIS data suggest lower employment shares than national data, the sector can be assumed to have a relatively higher level of small (and generally informal) firms. The agriculture sector, for example, accounts for 16 percent of total employment (according to national data), but only 8 percent of employment in larger firms (Figure 2.4).⁴² Likewise, where ORBIS data suggest higher employment shares than national data, the sector has relatively low levels of small, generally informal, businesses (fewer additional workers are picked up in smaller or informal sector firms). The manufacturing sector, for example, accounts for only 7 percent of total employment in Kazakhstan, but double that figure in larger firms, suggesting greater levels of formality.⁴³

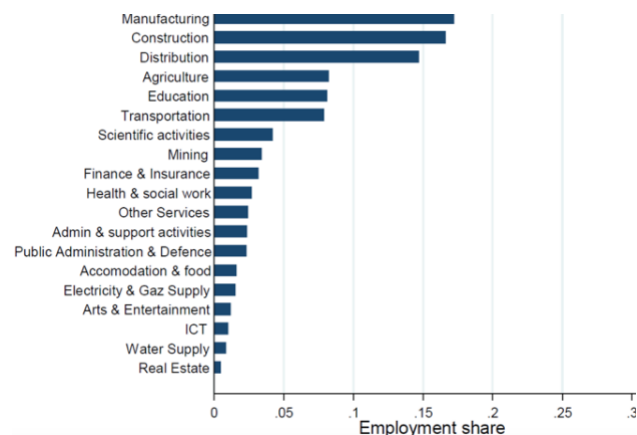
⁴¹ The Bureau van Dijck’s ORBIS database is a commercial database covering annual company accounts of incorporated firms in various economies. For Kazakhstan, the ORBIS dataset consists of 67,000 incorporated enterprises across agriculture, industry and services over the period 2008–14. The dataset is estimated to cover about 50 percent of total employment in Kazakhstan.

⁴² The authors used the Statistical Classification of Economic Activities in the European Community (NACE) for the breakdown by sectors.

⁴³ It is also possible that the sampling frame is not representative. The ORBIS data suggest much higher formal employment in construction than national data which, if accurate, would suggest very low levels of informality. As

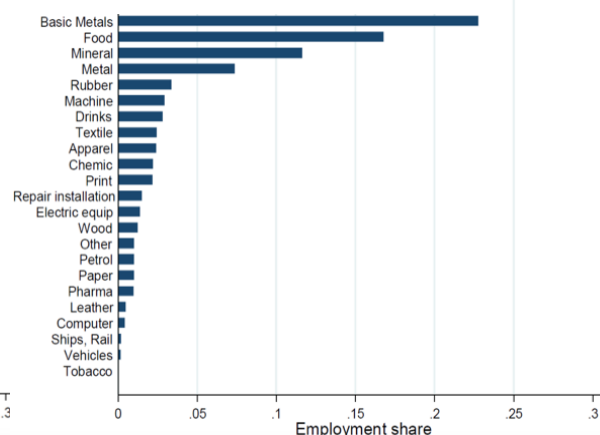
44. **Employment in Kazakhstan’s manufacturing sector is highly concentrated in a few industries.** While value-added data at the sub-sectoral level in manufacturing is not available, employment data suggests that a full 60 percent of employment occurs in just three sectors: metallurgy, minerals processing, and food production (Figure 2.5). Outside of these three sectors, manufacturing jobs are dispersed among a range of industries, each with relatively limited employment (Figure 2.4).

Figure 2.4 Employment Distribution by Sector, ORBIS data



Source: Duparcq and Konings 2016.

Figure 2.5 Employment Distribution in Manufacturing, ORBIS data



Source: Duparcq and Konings 2016.

45. **There is a high concentration of state ownership in Kazakhstan's productive enterprise sector.** Of the 67,000 firms surveyed by ORBIS in Kazakhstan, about 20,000 were SOEs (primarily in education). While it is not possible to assess the value added contributed by these establishments, the sheer proliferation of state-owned firms (in holding companies and otherwise) suggests that SOEs have a sizeable influence on the overall functioning of the productive enterprise sector.

46. **Business entry rates indicate limited entry in high-value manufacturing, with most firm entry into low-value services.** Table 2.1 shows the region-sector matrix of start-up rates. Regionally, start-ups as a proportion of existing registered or larger firms (those covered in ORBIS) are highest in the Almaty and Akmola regions, indicating increasing agglomeration into the two major city centers.⁴⁴ Among sectors, the highest start-up rates are observed in the lowest value services (followed by construction). In other sectors—including agriculture—the rate of business entry is significantly lower. The legacy of the post-Soviet era has meant that most farms and lands had already been allocated before the economic transition, and thus few new farms have entered the market. Furthermore, ORBIS data reflect only large, registered firms. Consequently, it

construction is a sector that typically has high levels of informality, it suggests some of the differences across datasets have to do with sampling differences.

⁴⁴ The start-up rate is defined in Duparcq and Konings (2016) as the share of newly registered firms in the total number of firms in a region. Start-ups are defined in the study as small firms less than five years of age.

is unlikely that much of the activity in agriculture would be captured. Start-up rates in manufacturing are about one-seventh of those in services; most new manufacturing firms are based in those provinces specializing in metallurgy and minerals processing.

Table 2.1 Start-up Rates, by Region and Major Sector (in Percent)

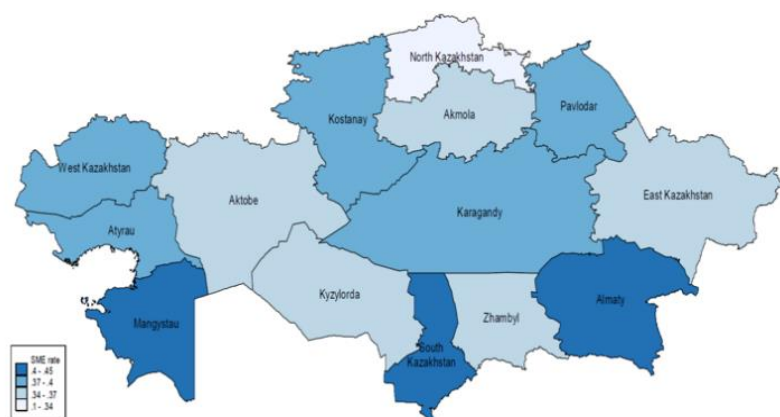
Region	Agriculture	Manufacturing	Construction	Utilities	Services
Akmola	3.5	5.0	21.0	0.9	54.0
Aktobe	3.6	7.0	18.0	1.4	51.0
Almaty	2.1	7.0	11.0	0.4	63.0
Atyrau	2.3	4.0	28.0	1.4	48.0
East Kazakhstan	5.1	11.0	18.0	1.3	49.0
Karagandy	3.8	16.0	19.0	2.0	40.0
Kostanay	6.5	10.0	18.0	0.7	48.0
Kyzylorda	6.3	5.0	15.0	1.8	45.0
Mangystau	7.2	5.0	27.0	1.7	44.0
North Kazakhstan	14.7	9.0	11.0	1.9	47.0
Pavlodar	2.7	12.0	16.0	1.4	48.0
South Kazakhstan	9.3	9.0	23.0	0.9	47.0
West Kazakhstan	3.1	6.0	17.0	0.4	57.0
Zhambyl	5.1	10.0	23.0	0.9	45.0
Nationwide	4.2	8.0	17.0	1.0	53.0

Source: Duparcq and Konings 2016.

Note: Entries higher than the nationwide level are highlighted in bold.

47. **The Kazakhstan Enterprise Map suggests that small firms tend to stay small.** The Enterprise Map points to very stark differences across regions and sectors between the share of new firms and the share of SMEs. An important feature of Kazakhstan's enterprise sector is that it is characterized by a particularly high share of SMEs to start-ups across regions and sectors (Figure 2.6). If most firms start small, then a high share of SMEs to start ups would suggest that firms tend

Figure 2.6 Small Enterprise Rates, by Region



Source: Duparcq and Konings 2016.

to "get stuck in the middle." That could reflect constraints to further growth which potentially prevent them from exploiting economies of scale. With most SMEs engaged in services, it could also reflect the lower natural size for reaching the sector's productive efficiency. As will be discussed, the productivity differentials between large firms and SMEs in the service sector are limited.⁴⁵ A

⁴⁵ The empirical analysis, explained later in the text, evaluates the effects investment climate attributes and firm controls on the relative productivity of individual firms, that is their individual sales per worker measure relative to the industry average.

substantial heterogeneity across sectors, regions, and firm types suggests as well that the post-entry performance of small firms is heterogeneous.⁴⁶

B. Establishments in Kazakhstan

48. World Bank Enterprise Surveys for Kazakhstan, completed in 2013 and 2009, can be used to assess productivity levels over time. The Enterprise Surveys for Kazakhstan cover about 600 firms, which can be weighted according to the sampling frame to get an assessment of output, employment, and other characteristics of firms at the national level. The data does have some major limitations—including small size and a high non-response rate along key variables—it can be weighted. Taking into account non-response of key variables (including sales)—which, together with small size, is a limitation of the data—reduces the sample of firms to about 400. While Enterprise Surveys aim to be nationally representative across three major strata (size, region, and major sector), the survey should not be used to evaluate differences over time that rely on the sampling frame, since the design of the survey would require information from the same sample of firms over years (which is provided but not sufficiently enough—the panel includes only 83 entities out of 600 in the cross-section). It cannot, for example, be used to observe the growth of firms in a particular sector or the change in employment in a given region. It can, however, be used to assess relative differences among firms in each stratum as well as productivity levels over time.⁴⁷

49. Because the data are not designed to measure the composition of firms (by sector, region, or size), they can only be used to evaluate differences across segments of the population and not any segment's contribution to overall output or employment.⁴⁸ The bulk of the analysis of the establishment sector relates to differences in productivity across types of firms. Understanding how productivity is determined at the establishment level is important for guiding policies to improve the investment climate in the private sector. Where policies are found to influence productivity in firms significantly, authorities may concentrate on improving these conditions to create an enabling environment for higher investment.

⁴⁶ The Enterprise Map does not note SME density by sector (as it does with start-ups), so it is not possible to evaluate in which sectors new firms have greater difficulty growing.

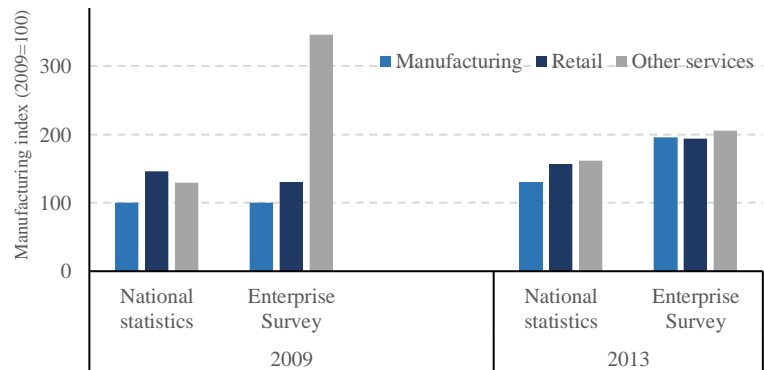
⁴⁷ Productivity is measured as output per worker (in the case of the Enterprise Surveys, sales per worker).

⁴⁸ The Enterprise Data would suggest very volatile contributions by sector/size/or region to employment and output, and thus using the data from any single year could produce a spurious analysis. As a result, only productivity can be assessed, as this computation does not depend on the sample frame fully reflecting the total population.

50. Nonetheless, Enterprise Survey data are used judiciously in assessing productivity.

Productivity estimates using national accounts data vary considerably from those using Enterprise Survey data (Figure 2.7). In part, this reflects the fact that the Enterprise Survey covers only formal sector establishments. Subsequently, in sectors where informality is typically high, the Enterprise Survey tends to

Figure 2.7 Average Output per Worker, by Sector; National Statistics versus Enterprise Surveys, 2009 and 2013



Sources: Statistical Committee of the Republic of Kazakhstan; World Bank Enterprise Surveys, 2009 and 2013; World Bank staff estimates.

underestimate employment and overestimate productivity (for example, in “other services”). Moreover, if informality grew in a particular sector, the Enterprise Survey will tend to overestimate the growth in productivity over time. Nevertheless, the quality of the 2009 Enterprise Survey data appears to be weak. In particular, it suggests very high levels of output/productivity in the services sector which is not consistent with national statistics (even accounting for the omission of informal firms). Moreover, productivity changes over time (from 2009 to 2013) are unlikely (for example, the near 50 percent reduction in productivity in the services sector). For this reason, the analysis is generally restricted to the 2013 Enterprise Survey, except for assessing changes in productivity in the manufacturing sector.

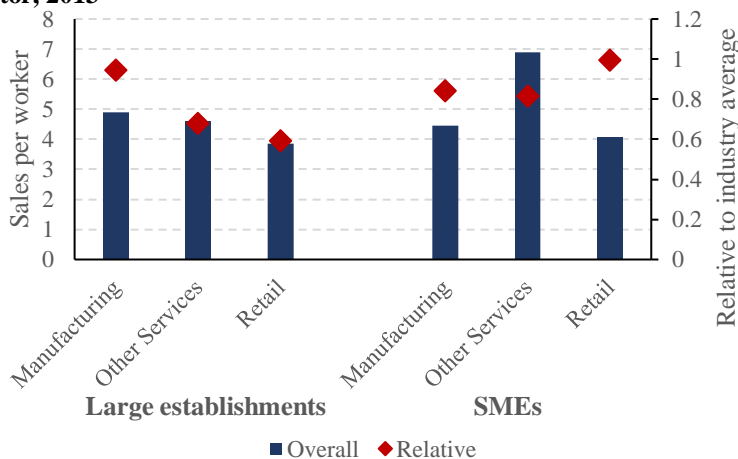
51. **Service sector establishments are significantly smaller than manufacturing firms, both in terms of output and employment.** Retail establishments, in particular, are about one-third the size of manufacturing firms in terms of employment, and about one-eighth their size in terms of output. Other services also tend to be small (in terms of employment). Figure 2.8 shows the average output and employment per firm among sectors; it is highly likely that these numbers are not accurate either due to sampling errors or incorrect answers being provided on questionnaires, or both.

Figure 2.8 Average Output and Employment, by Sector, 2013



Sources: World Bank Enterprise Survey for Kazakhstan, 2013; World Bank staff estimates.

Figure 2.9 Productivity Levels of Establishments, by Firm Size and Sector, 2013



Sources: Enterprise Survey for Kazakhstan, 2013; World Bank staff estimates.

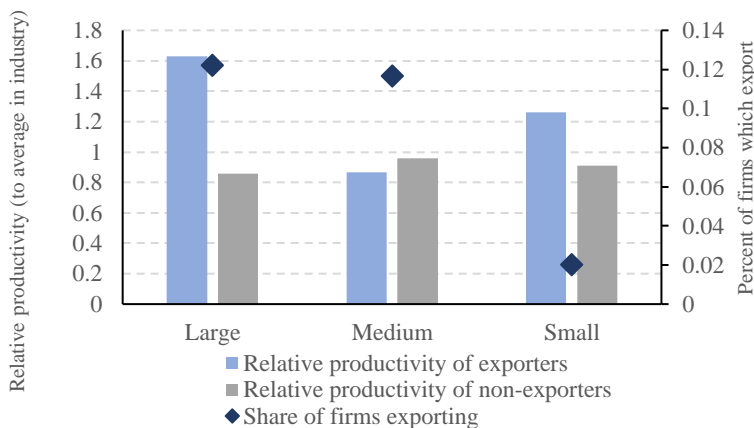
52. **Despite the data inconsistencies, it is intuitive that SMEs can compete in services, but they are significantly less productive in manufacturing.** At the highest level of aggregation, SMEs exhibit higher productivity levels than large establishments, but part of that reflects the composition of small and medium firms. Figure 2.9 shows the average sales per worker by firm size and by sector in Kazakhstan. While SMEs have an advantage in total productivity in services, in manufacturing they are at a disadvantage to large establishments. Because that disadvantage could itself reflect the sub-sector industry mix (for example, SMEs may concentrate on lower value manufactured goods), firm productivity levels were also calculated relative to the sub-sector average. Even controlling for sub-sector characteristics that may influence productivity, small and medium establishments appear to be less productive than large firms in manufacturing, but more productive in services.

53. **Large establishments should have a productivity advantage in both manufacturing and services; their productivity disadvantage in services likely comes from market forces**

preventing their exit or right-sizing. In general, large establishments should be more productive.⁴⁹ (This is also confirmed empirically for Kazakhstan, as discussed later). When they are not, it is because they have grown to a level that is beyond the scale at which efficiency is maximized (in which case they should shrink), or in which their inefficiency is not constrained by market forces (in which case they can continue to operate even with losses). The data do not allow for a full investigation of the sources behind the productivity disadvantage of large establishments, but they do suggest that the services sector has not realized the full efficiency gains that should be possible with scale. The World Bank's recent Country Private Sector Diagnostic for Kazakhstan points to several services in which scale economies could be further exploited, including logistics, finance, communications, and health and education.

54. Within manufacturing, large exporters have a significant productivity advantage over other firms. Exporting firms, in general, are more productive than non-exporters. However, the productivity advantage of exporters is present particularly in the case of large firms, even taking into account the industry mix (Figure 2.10). Large firms which export have, on average, a 60 percent productivity advantage over the mean productivity levels in the industry. On the other hand, the least productive manufacturing establishments are large firms which do not export.

Figure 2.10 Relative Productivity of Establishments, by Firm Size and Exporting Status, 2013

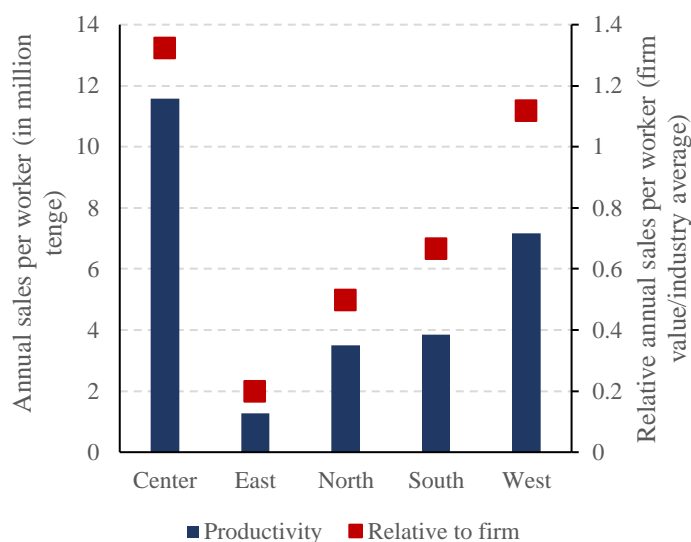


Sources: Enterprise Survey for Kazakhstan, 2013; World Bank staff estimates.

⁴⁹ Andrews et al., 2016. For OECD economies, the authors also point out that the cause of the divergence in productivity in these economies is the technological gap and the least extensive presence of pro-competitive product market reforms, suggesting that larger firms, among other things, enjoy policy weaknesses that stifle diffusion.

55. Productivity varies significantly by location. A simple reporting of average sales per worker by region suggests that the manufacturing and service sector firms with the highest productivity are concentrated in central Kazakhstan and, to a lesser extent, in the western regions of the country (Figure 2.11). Because industries have unique characteristics that impact overall productivity, the productivity differentials may be capturing differences in the industry mix among regions. However, even controlling for industrial characteristics, central Kazakhstan (followed by the west) are the regions of the country where productivity is highest. Kazakhstan’s three largest oil fields—Tengiz, Karachaganak, and Kashagan—all lie in western Kazakhstan near the Caspian Sea, while the central region (Karagandy) contains the country’s main industrial complex, specializing in iron, steel, and copper.

Figure 2.11 Average Sales per Worker, Overall and Relative to Industry, by Region, 2013



Sources: Enterprise Survey for Kazakhstan, 2013; World Bank staff estimates.

C. Determinants of Productivity Among Establishments

56. Understanding what constrains productivity in the establishment sector is important for guiding policy. In general, productivity growth can come from improvements within firms—as individual firms increase output for any level of inputs through upgraded internal capabilities—or from shifting resources (capital, labor, and other) to higher-value firms. As was shown in the previous chapter, the productivity growth slowdown in Kazakhstan has been driven by a shift of labor toward lower-value activities. Job growth within the industrial sector has also occurred at the low end of the productivity spectrum. The transfer of resources away from higher-value private sector firms (or industries) suggests constraints to efficient markets, where unproductive private sector firms are protected, and potentially productive private sector firms are discouraged from accessing the market or expanding.

57. Firms complain about common obstacles to business, with corruption topping the list.

The Enterprise Survey asks firms to rank their perceived constraints to doing business, listing about a dozen features of the business environment that could present obstacles to firm growth and productivity (Table 2.2). Four features figure prominently in firm complaints: (i) corruption, (ii) lack of educated workforce, (iii) competition with informal firms, and (iv) inadequate access to finance. Corruption tops the list of obstacles facing firms in Kazakhstan among all types of firms, regardless of size or sector. Competition with the informal sector ranks as a key obstacle for growth in small and medium enterprises (but much less so for large firms), while large firms identify taxes as a constraint.

Table 2.2 Firm Complaints on Obstacles to Doing Business, 2013

% of firms complaining about:	Total	Small	Medium	Large	Manu- facturing	Retail	Other services
Corruption	17	18	17	11	12	20	20
Inadequately educated workforce	14	11	15	26	16	15	11
Practices of informal sector competitors	13	13	15	6	9	13	18
Access to finance	11	12	9	11	15	7	10
Electricity	11	11	9	17	12	11	9
Tax rates	10	12	7	11	9	8	12
Access to land	5	5	5	2	4	7	3
Transport	4	4	5	6	6	4	3
Business licensing and permits	3	3	6	0	3	5	3
Customs and trade regulations	3	3	4	2	5	1	3
Courts	2	1	2	2	1	1	3
Crime, theft and disorder	2	2	2	2	1	3	2
Tax administration	2	2	2	2	4	2	1
Labor regulations	1	1	1	2	1	2	0
Political instability	1	1	1	2	1	1	2
Total number of firms:	521	304	163	54	170	177	174

Sources: Enterprise Survey for Kazakhstan, 2013; World Bank staff estimates.

58. Firm complaints are not a robust method for determining the key obstacles to firm growth.

To determine what factors most influence productivity at the firm level, a more sophisticated econometric analysis of productivity is needed. The Enterprise Survey collects data on more than 200 firm aspects (some are assessments of constraints facing firms, and some are objective data related to the firm). Topics include bureaucracy and corruption, use of the courts and crime, access to finance, informality, infrastructure, innovation, taxes, and trade. Methodologically, one important problem that emerges when one faces 200-plus potential explanatory variables is difficulty in deciding which indicators are the most important. This issue is critical because, in many economies, many areas may require attention. In other words, the problem is not identifying areas that are holding economies back, but instead identifying those areas where policy reform is likely to have a more significant impact on development. This choice involves combining information on how far behind an economy is in each area with estimates of the expected effect that gains in each different area will have on firm performance.

59. The empirical analysis draws upon the Enterprise Survey for Kazakhstan. The Survey covers two years, 2009 and 2013, and includes data for 56,272 private Kazakh entities.⁵⁰ With 600 observations in the 2013 dataset, the median weighting yields a sample size of 14,582 firms which employed a total of 636,367 workers. The 2009 dataset consists of 544 observations representative of 10,680 firms employing 640,258 workers. The key differences from the ORBIS dataset are that the Enterprise Survey (i) excludes the agriculture sector and (ii) includes only the formal sector, thereby excluding firms operating without formal registration.

60. An econometric analysis of productivity constraints was conducted building upon existing methodology.⁵¹ Specifically, the methodology minimizes possible concerns about the endogeneity of firm-level investment climate indicators by holding basic firm characteristics constant and using instrumental variables measured for strata defined on the basis of firm size, industry, and state. To deal with the problem of choosing the set of relevant explanatory variables, this study follows Escribano and Guasch (2005) in using a general-to-specific strategy in which an initial model with a large number of variables is simplified to achieve a parsimonious specification. In principle, this strategy enables the study to avoid the omitted variables problem (that is, biases and inconsistent parameter estimates) likely to arise when starting from too simple a model.

61. Unlike Escribano and Guasch (2005), the full set of variables in the database was not used for the analysis.⁵² There are two reasons for this difference.⁵² First, the analysis employs only objective indicators on investment climate constraints, ignoring firm “complaints.” Second, instead of using all survey questions as potential investment climate indicators, this study focuses on four areas—technology, corruption, competition with informality, and regulatory environment—all of which are drawn from the private sector analysis finalized in the Systematic Country Diagnostic (SCD) and Country Private Sector Diagnostic (CPSD) for Kazakhstan.⁵³ Within each area, the study restricts the set of explanatory variables to indicators that are straightforward to interpret, proxy for the key findings of the SCD, and that potentially would have a significant and robust effect on firm performance, as measured by the productivity of labor.

62. Table 2.3 summarizes the eight investment climate variables used as potential determinants of labor productivity at the firm level across the sample of 372 observations (that is, firms that have reported the information required for analysis). The investment climate

⁵⁰ The details of the Enterprise Survey data sampling methodology can be found in Annex 2.1.

⁵¹ Specifically, the econometric analysis of productivity constraints was conducted building upon the methodology of Escribano and Guasch (2005) for Guatemala, Honduras, and Nicaragua, and Escribano, Guasch, and de Orte (2006) for Chile.

⁵² The results of the analysis can be found in Annex 2.2.

⁵³ “Competition with informality” means formally registered firms facing competition from those firms that either avoid registration or have yet to formally register. In the econometric model, the variable on competition with informality merely answers whether formally registered private firms face competition from firms that are *not* formally registered.

attributes in this table measure several dimensions of governance and institutional quality. For example, the variable that captures the extent to which firms pay bribes to access government services or public contracts—which measures the degree of corruption—would also illustrate the state of governance. The variable that measures whether firms have applied for an operational license would reflect not only regulatory compliance, but also the efficiency of government efforts to improve the business climate, and the level of regulatory burdens.

Table 2.3 Main Investment Climate Determinants of Labor Productivity, by Category

Category	Variable
Corruption	% of total annual sales paid as informal payment/gift
Competition with informality	Dummy for competition against unregistered/informal firms
Technology and skills	Dummy for formal training programs for employees
Access to finance	Dummy for whether the firm has the overdraft facility
Electricity	Dummy for whether the firm experienced power outages
Tax administration	Dummy for whether the tax inspector visited the firm
Business licensing	Dummy for whether the firm submitted an application to obtain an operating license
Transport losses	% of total value of products the firm shipped to supply markets that has been lost while in transit

63. **The set of variables listed in Table 2.3 was chosen based upon the conclusions drawn from the latest SCD for Kazakhstan,** which figured major constraints to private firms growth, as well as the results of significance and robustness checks to reduce an otherwise more general model that initially included a larger number of variables. Variables with values for small numbers of observations (that could negatively affect representativeness) were dropped to reach a more parsimonious model.⁵⁴

64. **Analysis of productivity constraints confirms that government corruption presents significant and severe obstacles to the successful operation of firms, and SMEs in particular, in Kazakhstan.** Corruption is mentioned as the top obstacle to doing business across all sectors, and it is the top complaint for SMEs.⁵⁵ Moreover, econometric analysis of output per worker among firms suggests that corruption significantly hampers the relative productivity of a firm (the productivity of the firm relative to the industry in which it is operating).⁵⁶ Indeed, output per worker in firms which are required to make informal payments or gifts is about 30-36 percent lower than in firms which are not required to make such payments.

65. **The burden associated with meeting government regulations is an even greater deterrent to productivity.** The Enterprise Survey from 2013 revealed a significant "time tax" of

⁵⁴ Variables that were excluded from the model because of scarceness include borrowing from financial institutions, losses due to crime or infrastructure outages, security costs, average wait time to obtain infrastructure connections, and investment in research and development, among others.

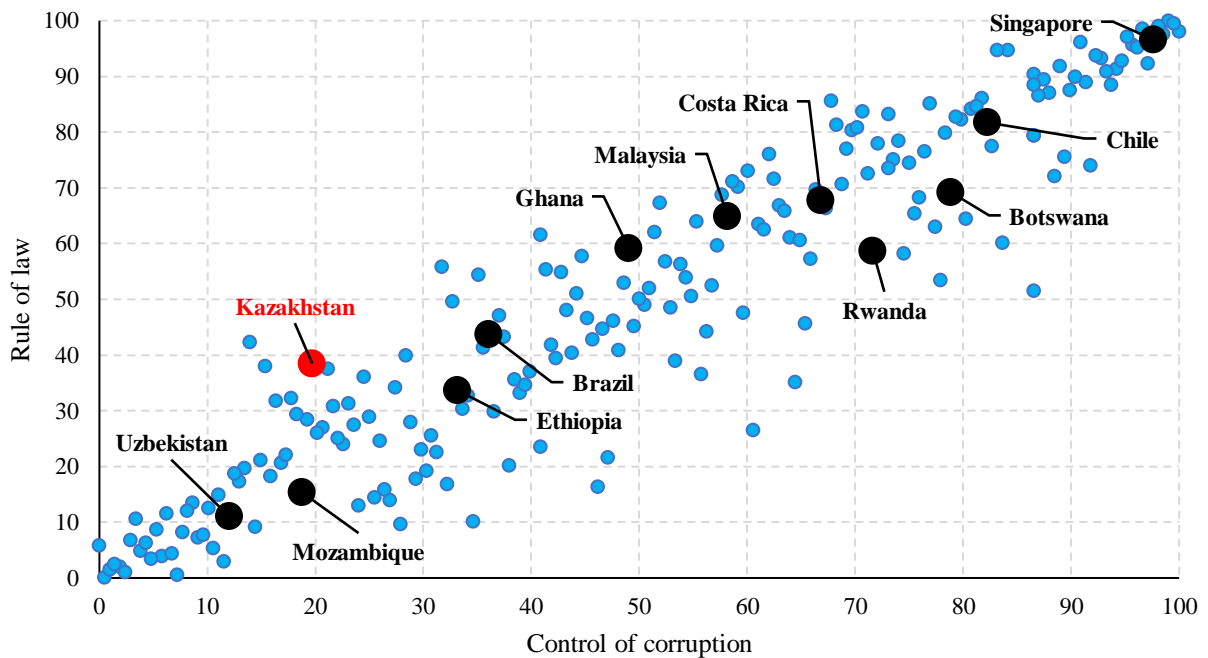
⁵⁵ [World Bank Enterprise Survey for Kazakhstan, 2013.](#)

⁵⁶ The results from the econometric estimations are included in Table 2A.1.

dealing with government regulations, which significantly impacted firm productivity. Controlling for industry effects, firm productivity was almost 40 percent lower (both for all firms and SMEs in particular) for firms that were required to obtain an operating license over the prior two years. This tax is not just a one-time cost for start-ups; it applies throughout the life of the firm for undertaking new activities or operations in new geographic regions as well as for renewing licenses. Indeed, the average age of the 20 percent of firms in Kazakhstan which applied for a license over the prior two sample years (eight years) was not significantly different from those that did not have to submit a license application (nine years). At the end of 2012, the government approved several acts to reduce the administrative burden of licensing for firms operating in the country, but the 2013 Enterprise Survey results suggest the burden remained high.⁵⁷

66. Kazakhstan is indeed suffering from a poor control of corruption and a lack of rule of law, as evidenced by the World Governance Indicators.⁵⁸ As shown in Figure 2.12, Kazakhstan performs poorly on the control of corruption and the rule of law when compared to most countries in the world. In 2017, Kazakhstan did better than only 19 percent of countries in the world on corruption control, while on the rule of law, it managed performing better than only 38 percent of world’s countries.

Figure 2.12 The 2017 Percentile Ranking of Countries on Corruption and Rule of Law



Sources: World Governance Indicators, 2018

⁵⁷ See *Changes in the Licensing Systems in the Republic of Kazakhstan*.

⁵⁸ The Worldwide Governance Indicators are a research dataset summarizing the views on the quality of governance provided by a large number of enterprise, citizen and expert survey respondents in industrial and developing countries. These data are gathered from survey institutes, think tanks, non-governmental organizations, international organizations, and private sector firms.

67. The age and size of a firm also have an impact on the firm's productivity relative to its industry average. New enterprises are significantly more productive than old ones. Each additional year that a firm has been in operation reduces the firm's output per worker by 1.1 percent on average. Output per worker in firms that are less than three years old is about 9 percent higher on average than in firms that are 10 years old.

68. The large productivity gap between young and old firms suggests that many important elements of Kazakhstan's economic transition have not been completed. Evidence from Central Europe suggests that in economies where reforms were robust, the gap between less productive older firms and more productive newer firms diminished. In these economies, closures and restructuring within the large enterprise sector raised productivity, while the rapid growth of enterprises and employment reduced productivity of factors in the new sectors.⁵⁹ In Kazakhstan, the ability of older, less productive firms to stay in operation suggests that the process of creative destruction, by which less productive firms exit the market, is not fully effective.

69. Enterprise Survey data for Kazakhstan sets the stage for a more rigorous analysis of firms with a nationally representative, large firm sample. The analysis of Kazakhstan's firms using the World Bank's Enterprise Survey allows only a glimpse of the conditions under which establishments operate, and it is inadequate for assessing key areas of analysis routinely undertaken to identify constraints to growth and productivity. Larger, nationally representative firm data are needed to evaluate essential factors such as (i) resource movements over time (reallocation of market shares toward more productive firms, a key driver of productivity growth); (ii) entry and exit of firms (also a driver of productivity, with productivity gains from more productive entrants and the exit of less productive existing firms); (iii) productivity differentials in particular sectors over time (to evaluate technology spillovers, which contribute to productivity gains by surviving firms); and (iv) job creation by types of firms (particularly age and size), to gauge the drivers of job creation and the quality of jobs.

70. Access to the government's business registry will allow for a much clearer picture of the nature of both productivity growth and private sector growth and employment. It will allow for an understanding of which firms grow and create jobs, how productivity relates to firm survival and growth, how productivity growth relates to wage growth, and how technology spills over to other firms in an industry, how bank finance relates to firm growth, and what kinds of firms export, to name a few. If portions of these data are made available, they will provide even greater insights into the nature of the private sector and the kinds of activities it has undertaken.

⁵⁹ World Bank 2002.

CHAPTER 3. Conclusions and Policy Recommendations

71. Kazakhstan's past economic growth has been shaped by its structural and policy heritage and a heavy dependence on expanding energy production. Although the booming state-owned oil sector has allowed for a rapid increase of domestic savings and a boost in aggregate demand, it also has had adverse effects on the development of the non-oil tradable sectors and overall private sector development. Large-scale *public* investments and limited structural reforms magnified the growth response. During rising commodity prices, the state heavily financed new oil and mining projects (such as the Kashagan oil field, among others), which led the country to leading positions in the world in the production of certain commodities.⁶⁰ The public sector expanded further, resulting in a vast SOE presence that controlled most of the formal economy, influencing the policy base and distorting market mechanisms both within sectors and economywide.⁶¹

72. Boosting sustainable private sector-led productivity growth will require structural changes. After two global oil price shocks in the last decade, Kazakhstan's development model has come increasingly under stress. Much of Kazakhstan's early economic success was attributed to within-sector productivity improvements on the back of doubling oil prices that supported massive public investments in critical infrastructure which were able to generate significant growth. But as oil price rises slowed and ultimately reversed, Kazakhstan's productivity became a drag on growth, with resources shifting to lower-value activities and investment declining sharply. Job growth within the industrial sector has also occurred at the low end of the productivity spectrum.⁶² These dynamics underscore the importance of structural shifts by developing a productive and competitive private sector for that will be critical to achieving sustainable long-term growth.

73. The state's presence in the economy should be reduced through structural reforms. Reducing the role of the state requires not only the elimination of private sector distortions and favorable treatment of SOEs (as described in detail in Kazakhstan's recent SCD), but also the creation of a level playing field for diversified private investment. This approach requires the government to develop and share its vision for each subsector or major market in the economy. Unless comprehensive plans are developed for each subsector or major market in the economy,

⁶⁰ For example, Kazakhstan produces 35 percent of global uranium, and it has the world's second-biggest uranium reserves after Australia.

⁶¹ By 2009, Kazakhstan's major players had been allocated among three large state-owned conglomerates, Samruk-Kazyna (SK), Baiterek, and KazAgro. In 2009, all mining businesses were brought under Tau-Ken Samruk, a subsidiary of SK.

⁶² Samruk-Kazyna was created in 2008 following a merger of two state funds, Samruk and Kazyna. A primary goal of the newly established fund was to support the real estate sector by boosting financing to the construction sector and refinancing mortgage loans to deal with the then-rising share of non-performing loans. The increase in financing boosted investments and redirected employment reallocation into the construction sector.

privatization and deregulation efforts may not succeed, and the risk that the benefits of privatization will be captured by a small set of established businesses will remain high.

74. Kazakhstan cannot rely on an oil price recovery to sustain productivity growth. While a rebound in oil prices will provide a temporary boost to measured productivity—primarily reflecting terms of trade effects—once oil prices stabilize, further productivity growth would be expected to slow or turn negative, particularly if the oil boom further reduced the relative size of other productive sectors. Kazakhstan has, in general, moved *down* the productivity ladder at the sectoral level, further reducing the capacity of the non-oil sector to act as a shock absorber during commodity price downturns. Kazakhstan's future focus on productivity should be to ensure that the productivity engines yield high—as well as stable—productivity growth. To achieve this goal, the country will need to attract and nurture productive and competitive industries that reduce its reliance on oil outcomes and that tap into Kazakhstan's extensive resources.

75. The non-oil private sector is the key source of sustained productivity growth. Several features are common in economies where the private sector functions well.⁶³ While the pathway to private sector development is country-specific, several features are present in the majority of economies where the private sector thrives. The conditions are not mandatory, but they each are important characteristics that in some way signal the potential for the private sector to realize strong and sustained growth and productivity improvements. The policies required to *arrive at* these conditions may differ across economies, but economies exhibiting these conditions are generally found to have more robust and dynamic private sectors. The features are:

- (1) Strong entry and exit of firms (across a range of industries)
- (2) Limited market dominance across sectors
- (3) Entrepreneurship, through the discovery of new products and markets
- (4) Diminishing productivity deviation among firms within sectors (technology spillovers)

76. Fundamental constraints to private sector development must be addressed to reverse productivity stagnation. Kazakhstan's productivity dilemma demands it attract and grow investments outside of oil and extractives, and outside of low-value (non-tradeable) services tied to oil wealth. To do so, it needs to move further on reforming long-standing laws and arrangements that protect well-connected firms and handicap new ones. Establishment data points to a private sector where small firms do not enter outside low-value areas, where dominant (unproductive) firms do not exit, and where SMEs face significant constraints to operate, impacting productivity.

77. The government will need to deal with corruption more aggressively and comprehensively. The successful operation of firms—and SMEs in particular—is constrained by government corruption. According to a business climate survey conducted by the National Chamber of Entrepreneurs "Atameken" (published in 2017), nearly one in two entrepreneurs in

⁶³ Taube (2003) provides a brief discussion on this at the OECD-CUTS Roundtable.

Kazakhstan (45 percent) faced corruption. However, only 16 percent of respondents reported their complaints about corruption schemes to law enforcement bodies, which may be due to a lack of trust in law enforcement officers.⁶⁴ Corruption also impedes foreign direct investment. For international companies, corruption is the number one obstacle to doing business in Kazakhstan. The weak judicial system, which enables corruption at all stages of the legal process, also impedes implementation of the broad legislative framework supporting anti-corruption efforts.⁶⁵

78. Countering corruption will require systematic attention to identifying corruption where it exists and the expansion of anti-corruption reforms. While the government has a strategy for combatting corruption, the activities associated with the plan do not align with the objectives.⁶⁶ The inadequate reporting of corrupt practices that impact private sector development hinders authorities' ability to respond. The National Report on Countering Corruption lacks any analysis of corruption risks in the business environment; subsequently, it is not a comprehensive representation of corruption in Kazakhstan. A weak judicial system further compromises Kazakhstan's otherwise extensive legal framework for dealing with corruption.

79. The following are some of the anti-corruption measures the government should consider: (i) make the public spending fully open and transparent, (ii) reduce—and eliminate where possible—excessive regulatory burden to prevent corruption cases from the bureaucratic red tape, (iii) replace regressive and distorting subsidies with targeted cash transfers, (iv) establish or align the current regulations with international conventions, such as OECD Anti-Bribery Convention, (v) deploy and extend the existing use of smart technology in providing government services to limit the personal engagement.

80. Kazakhstan's burdensome regulatory environment has impeded private sector development. The challenges associated with meeting government regulations represent an obstacle to productivity growth and provide opportunities for corruption. Some areas that stand out include the regulations associated with starting a business (including registering for value added tax), dealing with construction permits, and getting electricity. In all three areas, Kazakhstan has a long way to go in reducing its regulatory gap with OECD economies. The customs sphere—where the border administration lacks transparency and exporting and importing procedures are burdensome—is also vulnerable to corruption. Indeed, official data show that two of the four most corrupt spheres in Kazakhstan are customs control and tax collection (the others are roads and public procurement).⁶⁷

⁶⁴ OECD 2017b.

⁶⁵ OECD 2017b.

⁶⁶ With resolution No 234 of 14 April 2015, the government approved its Plan of Activities for 2015–17, which includes, apart from the 64 proper anti-corruption activities, another 65 aiming to counter “shadow economy.”

⁶⁷ OECD 2014.

81. The government is implementing reforms to encourage private investment, particularly in SMEs. The government is aware of many of the areas where action is needed. In the area of corruption, a moratorium on inspections of SMEs was introduced in 2014. At the end of 2012, the government approved several acts to reduce the administrative burden of licensing for firms operating in the country and in 2014 introduced changes regarding the process of obtaining licenses and applicable requirements.^{68,69}

82. Implicit or direct government support to SOEs and large-scale, well-connected firms hinders new firm entry and productivity growth. Empirical analysis suggests that older firms are less productive but continue operating, indicating that transition processes in Kazakhstan have not been completed. Transitioning to a market-based economy would reduce the productivity deficit of established firms; creative destruction would allow less-productive large firms to exit and more productive new, small firms to enter and grow. The heavy state control of the economy and the government’s interventionist approach to supporting the private sector contributes to an environment in which these connected firms (whether profitable or not) can thrive.

83. More fervent action is needed to level the playing field between well-connected establishments and other firms. The establishment data for Kazakhstan suggests older establishments have a productivity disadvantage to newer firms, implying some of the market mechanisms for exit are not functional. In many economies, the advantages provided to politically connected establishments give them a productivity edge. These advantages include greater access to credit (from government banks), protection from insolvency (through bailouts), and significantly reduced interference in terms of compliance with regulations. Ultimately, this prevents reallocation of resources to more productive firms.

84. To level the playing field for all firms—well connected or otherwise—the government needs to revisit the competition policy. Specifically, it is necessary to (i) reform the national competition law to align it to OECD standards, (ii) to engage in international trade agreements—and revisit likely unfavorable terms of current such agreements—to improve access of local businesses to international markets, and (iii) to fully decentralize the decision-making process to allow for free flow of resources and technology. Implementation of the competition policy depends on the ability of the government to introduce competition-friendly environment in the economy; thus, the reform will require a structural change, as well as the build-up of capacity in the government and its institutions.

⁶⁸ For example, the “Concept of Further Reforming of the Licensing System of the Republic of Kazakhstan for 2012–15,” which was introduced to simplify the procedures associated with obtaining a license.

⁶⁹ For example, time periods as well as the number of procedures and lists of documents required for obtaining the permits for construction, business registration and liquidation, bankruptcy have been reduced (see OECD 2017a).

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ANNEX 1. Growth Accounting Methodology

Total factor productivity (TFP) was estimated using a simple growth accounting framework, which constructs TFP as the (Solow) residual of a neoclassical production function of the form:

$$Y_t = A_t K_t^\alpha H_t^{\alpha-1}$$

where:

Y_t	GDP in year t
A_t	Total factor productivity in year t
K_t	Capital stock in year t
α	The income share of capital (assumed to be .45)
$H_t = h_t E_t$	Estimated human capital in year t
$h_t = e^{\varphi S_t}$	Estimated human capital per unit of labor in year t
S_t	Years of schooling of adult population (age 15+)
φ	Assumed rate of return to schooling (assumed to be 0.07), and
E_t	Total employment

The capital stock was estimated using a perpetual inventory method, assuming an initial capital output ratio of 2 in 1990, and growing the capital stock by the increases in the observed gross fixed capital formation minus depreciation (assumed to be 6 percent annually).

Taking logs, TFP growth is then estimated as the following:

$$\Delta \ln A = \Delta \ln Y - \alpha \Delta \ln K - (1 - \alpha) \Delta \ln E - (1 - \alpha)(\varphi \Delta S)$$

GDP, gross fixed capital formation and employment data came from the National Statistics Office of Kazakhstan. Schooling estimates were taken from Barro and Lee (2015), updated to 2016 by extrapolating from schooling growth rates over 2005–10.

ANNEX 2.1 Sampling Methodology Used in the World Bank Enterprise Surveys

85. **The sample for Kazakhstan is selected using stratified random sampling.**⁷⁰ Three levels of stratification were used: industry, establishment size, and region. There are three industries identified: manufacturing, retail, and other services. The size stratification was defined following the standardized definition for the rollout: small (less than 20 employees), medium (20-99 employees), and large (more than 99 employees). Regionally, sampling was stratified into five regions: North, South, East, West, and Center.

86. **For each selected year, a sample of 600 observations corresponding to a total of 45 strata was chosen** from the total sample frame that contains a complete and updated list of establishments as of the year of the Survey. The sample frames were not immune from typical problems found in establishment surveys: positive rates of non-eligibility, repetition, non-existent units, etc. Therefore, the sample observations were not distributed accordingly.

87. **Three definitions of eligibility were applied in estimating the universe of establishments in each stratum: strict, median, and weak.** For some firms where contact was not achieved during the screening process, it was not possible to directly determine eligibility. Consequently, three sets of assumptions on establishment eligibility were used to construct sample adjustments: (i) strictly eligible firms were only those for which it was possible to directly determine eligibility; (ii) within the median eligibility were the strictly eligible firms plus those who rejected the screener questionnaire or an answering machine/fax was the only response; and (iii) weakly eligible firms included all establishments included in (ii) plus all other entities for which it was not possible to make contact (for example, those with dead phone lines, incorrect addresses, and so on).

88. **The indicators computed for the Enterprise Survey website use the median weights.** Corresponding to the three levels of eligibility, individual observations were weighted to make proper inferences about the population. According to the Enterprise Survey's Implementation Reports, the median weights were used in delivering the outcomes of the surveys. Accordingly, the same weighting was used in conducting the firm-level analysis for this report.

⁷⁰ A stratified random sample is one obtained by separating the population elements into non-overlapping groups, called strata, and then selecting a simple random sample from each stratum (Scheaffer, Mendenhall and Ott 1996).

ANNEX 2.2 Methodology of Analysis of Productivity Constraints for Firms

89. As defined in Fajnzylber and others (2009) and Escribano and Guasch (2005), the study uses the following econometric specification to look at how each investment climate variable correlates with the measure of firm performance:

$$\log\left(\frac{Y_i}{L_i}\right) = \sum_j \beta_{1j} IC_{ij} + \sum_j \delta_{1j} C_{ij} + \vartheta_{1i}$$

where Y is output as measured by the firm sales, and L is employment in the firm (so that the left-hand-side variable can be interpreted as labor productivity). IC refers to investment climate variables, C – to other firm control variables, and ϑ is the random error term. The set of control variables, C , includes the firm’s age expressed in log terms and dummies for the region. Fajnzylber and others (2009) undertook their analysis using Enterprise Surveys for a large sample of economies and thus could include sub-sector specific dummies. Because of the limited number of observations using just the Kazakhstan analysis, output per worker was presented as a firm’s sales per worker relative to the mean for the sub-sector.

90. **It is important to note that the above expression does not fully specify the effect of the investment climate attributes on the TFP.** Normally, a more accurate version of the model would include the effect of the capital intensity—measured as the capital-to-labor ratio—which, if included, would be based on the following simple production function of the Cobb-Douglas form:

$$Y_i = M_i + P_i K_i^\alpha L_i^{1-\alpha}$$

$$P_i = P(IC_{pi}, C_{pi}) \exp(\vartheta_{2i})$$

where K is capital, M is intermediate inputs, P is TFP, and ϑ is the random error term. Simple rearrangements of the above equations would lead to the following:

$$\log\left(\frac{Y_i - M_i}{L_i}\right) = \log\left(\frac{VA_i}{L_i}\right) = \log(P_i) + \alpha \log\left(\frac{K_i}{L_i}\right)$$

$$\log(P_i) = \sum_j \beta_{2j} IC_{ij} + \sum_j \delta_{2j} C_{ij} + u_i$$

$$\log\left(\frac{VA_i}{L_i}\right) = \sum_j \beta_{2j} IC_{ij} + \sum_j \delta_{2j} C_{ij} + \alpha \log\left(\frac{K_i}{L_i}\right) + \vartheta_{2i}$$

where VA is the value added. The estimated parameters of the investment climate attributes as specified in the last equation can now be interpreted as representing the effect of these variables on the TFP. However, due to the incompleteness of the data in the Enterprise Survey, this expression of the model cannot be estimated, specifically because most firms declined to provide answers for questions required to estimate the value added and the capital intensity.

91. The model assumes homogeneity across five regions and sizes of firms, which is unrealistic unless there is a common production function. This issue has been addressed to some extent by including dummies for regions in the econometric specification to capture as much heterogeneity as possible. Following the intentions of the government of Kazakhstan to focus on the policy set for small and medium enterprises, the regression analysis is restricted in one case to only SMEs. In other cases, there is a dummy included for large firms.

92. Potential endogeneity of right-hand-side (RHS) variables in the regressions, driven by reverse causality from firm performance to the quality of government- and market-provided services to which individual firms have access, poses another challenge to estimation. For example, better performing firms may be targeted by regulators (tax officials, sanitation and safety inspection) as well as corrupt government officials and criminals. They might also enjoy privileges in getting access to external financing (such as bank loans) and have greater exposure to innovations through higher investments in research and development. To deal with the endogeneity problem, the study instruments the investment climate variables with their corresponding “group” means.⁷¹ Intuitively, the performance of individual firms may affect firm-level measures of the quality of the investment climate, but it is likely to have a much smaller effect on the environment in which all the other firms of the same size, sector, and region operate. So, the idea is to identify the impact of the investment climate on firm performance, after purging the firm-level measures of investment climate from the impact of individual firm characteristics. In addition to modifying the variables in the model, the two-stage generalized method of moments (GMM) procedure is applied to address the problem of endogeneity between RHS variables and the error term.

93. Missing observations at the firm level, which may dramatically affect the sample size as the number of RHS variables increases, pose another challenge for the analysis. To tackle this, the analysis follows Escribano and Guasch (2005) and substitutes the missing values with region-industry-size means for investment climate attributes. This procedure adds limited information to the sample given the already existing predicament to analyze Kazakhstan’s firm-level data, but gains from proceedings in this way far exceed the costs of substantially reducing sample sizes when all observations with at least some missing values are dropped.

⁷¹ A “group” is defined as a region-industry-size stratum used in the Enterprise Survey.

94. **Table 2A.1 presents the results of estimating the specification concerning the effect of investment climate variables on labor productivity—specifically the sales-per-worker index.**⁷² To assess the robustness of the results, the table presents estimates obtained under two econometric procedures: the ordinary least squares (OLS) and GMM. The first estimates, presented in column (1), are obtained using the OLS without correcting for potential endogeneity issues. The results in this column are based on the sample of 267 firms for which all controlling variables are available, without substituting missing observations for group means. The remaining columns are GMM estimates, with investment climate variables instrumented with their corresponding group averages. The final column presents the results for SMEs only. In case of column (2), the sample is also the original one, without substituting for missing observations, whereas in column (3), the missing observations are replaced with group means (simple averages). Also, the column (3) regression output instrumented the variable on corruption without accounting for firms who did not respond to the questions on corruption. Thus, the number of observations increases to 372 firms. All reported standard errors are robust to heteroskedasticity.

95. **Comparing the OLS results in column (1) of Table 2A.1 with GMM estimates reveals that controlling for reverse causality effects parameter estimates noticeably, which suggests that controlling for endogeneity is warranted.** In case of corruption, age, and location, the estimated effect on labor productivity is significant only when the larger sample, resulting from substituting missing values with group means, is used. Overall, the replacement of missing values with group means has some effect in terms of increasing efficiency (the standard errors associated to the parameter estimates become lower) but less so on the magnitude of the parameters themselves, which mostly continue to be of the same order.

⁷² The sales-per-worker index is calculated by dividing the sales-per-worker measure for an individual firm by the average measure for a subsector in which the firm operates.

Table 2A.1 Investment Climate Effect on Labor Productivity

	Dependent variable: Sales-per-worker index			
	(1) OLS: full	(2) GMM: full	(3) GMM: full	(4) GMM: SME
Substitution	No	No	Yes	Yes
Instrument			Simple average	Simple average
<i>Investment climate attributes</i>				
Competition with informality	-0.081 (0.129)	-0.081 (0.124)	0.064 (0.153)	0.088 (0.166)
Corruption	-0.025 (0.020)	-0.025 (0.019)	-0.313* (0.180)	-0.358* (0.185)
Trainings for employees	0.075 (0.208)	0.075 (0.201)	0.040 (0.181)	0.029 (0.192)
Access to finance	-0.333 (0.209)	-0.333* (0.202)	-0.248 (0.178)	-0.234 (0.192)
Electricity	0.078 (0.141)	0.078 (0.136)	-0.152 (0.150)	-0.229 (0.164)
Tax administration	0.143 (0.178)	0.143 (0.172)	0.136 (0.174)	0.178 (0.182)
Business licensing and permits	-0.217 (0.199)	-0.217 (0.192)	-0.385** (0.189)	-0.392** (0.195)
Transport losses	-0.027* (0.014)	-0.027* (0.014)	-0.019 (0.052)	0.025 (0.055)
<i>Firm controls</i>				
Age	-0.008 (0.006)	-0.008 (0.006)	-0.011* (0.006)	-0.010 (0.007)
Large	0.157 (0.226)	0.157 (0.218)	0.311* (0.177)	
Exporter status	0.473 (0.403)	0.473 (0.389)	0.276 (0.273)	0.272 (0.287)
Sector: retail	-0.242* (0.136)	-0.242* (0.132)	-0.181 (0.131)	-0.167 (0.136)
Sector: other services	-0.087 (0.130)	-0.087 (0.126)	-0.080 (0.132)	-0.048 (0.139)
Region: south	-0.290 (0.237)	-0.290 (0.229)	-0.224 (0.214)	-0.180 (0.228)
Region: west	0.140 (0.418)	0.140 (0.403)	0.619* (0.340)	0.637* (0.364)
Region: east	-0.523** (0.262)	-0.523** (0.253)	-0.637*** (0.210)	-0.647*** (0.222)
Region: center	-0.353 (0.250)	-0.353 (0.242)	-0.224 (0.216)	-0.223 (0.229)
Observations	267	267	372	325

Source: World Bank staff calculations.

96. Results reported in Table 2A.2 have been estimated without firm-level controls, thus focusing solely on the investment climate attributes of firms.

Table 2A.2 Investment Climate Effect on Labor Productivity (excluding firm controls)

	Dependent variable: Sales-per-worker index		
	(1)	(2)	(3)
	OLS	GMM	GMM
Substitution	No	Yes	Yes
Instrument		Simple average	Simple average
<i>Investment climate attributes</i>			
Competition with informality	-0.080 (0.139)	-0.014 (0.157)	-0.005 (0.156)
Corruption	-0.033** (0.016)	-0.002 (0.027)	-0.292 (0.219)
Trainings for employees	0.225 (0.196)	0.192 (0.173)	0.167 (0.166)
Access to finance	-0.289 (0.189)	-0.116 (0.190)	-0.008 (0.183)
Electricity	0.0452 (0.148)	-0.159 (0.145)	-0.182 (0.167)
Tax administration	0.164 (0.190)	0.139 (0.181)	0.105 (0.178)
Business licensing and permits	-0.160 (0.147)	-0.255 (0.169)	-0.218 (0.159)
Transport losses	-0.034** (0.013)	0.027 (0.060)	0.016 (0.057)
Observations	267	372	372

Source: World Bank staff calculations.

Note: * = significant at the 10 percent level; ** = significant at the 5 percent level; *** = significant at the 1 percent level. Robust standard errors are in parentheses. The table reports the results of regressing the sales-per-worker index on the investment climate attributes in the first column. Column (1) uses OLS, while Columns (2) and (3) use GMM; for regressions in Columns (2) and (3), region-industry-size averages are used as instruments, and missing observations are replaced with instrumental variables. Column (3) is different from the output in Column (2) in that it added another instrumental variable for corruption, thus eliminating firms who did not answer the corresponding questions either affirmatively or negatively.