SAMRUK KAZYNA

KAZAKHSTAN'S MACROECONOMIC OUTLOOK & NEW INVESTMENT HORIZONS IN DIGITALIZATION

BCG

THE BOSTON CONSULTING GROUP

2016-2017

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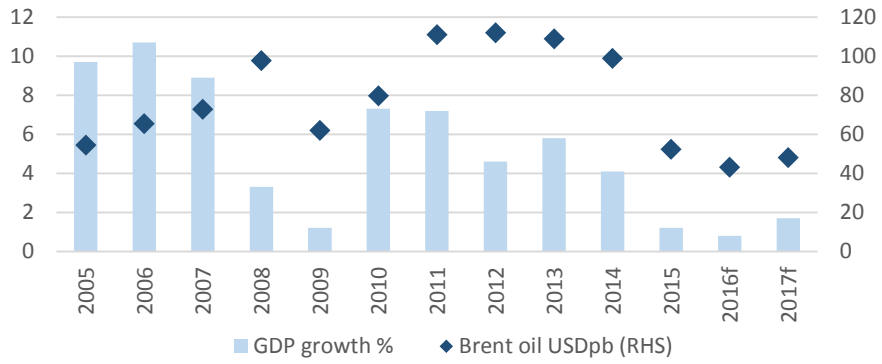
This is a joint publication by JSC Samruk Kazyna and The Boston Consulting Group, featuring Kazakhstan's macroeconomic outlook and new investment horizons in digitalization.

Section 1.0 Executive Summary

- Kazakhstan's GDP growth is anticipated at 0.5%-1.0% in 2016, supported by stimulus measures introduced under the Nurly Zhol program and anti-crisis plan. For 2017, GDP growth is projected to strengthen up to 2.0%, attributable to low base effect, expectations of recovery in global oil prices and increase oil output.
- Monetary policy for stimulus would also bode well for domestic demand, business investments and the general economic activities. Inflation is estimated to average at more realistic level of 13%-14% in 2016, easing to 6.0%-8.0% in 2017 as the high base impact diminishes.
- The tenge has stabilized since March 2016, supported by relatively positive developments on the domestic and global fronts. The USD-KZT exchange rate is expected to average at 342 in 2016, ranging at 340-345 in 2017.

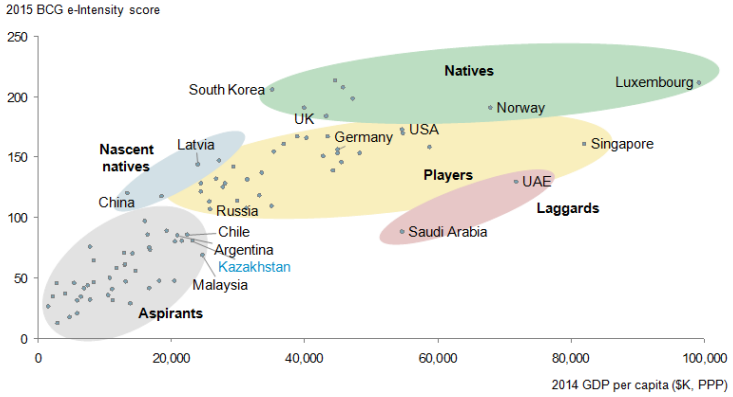
GDP Growth vs. Brent Price (2005-2017f)



Source: Ministry of National Economy, Bloomberg, Samruk Kazyna forecasts

- On new growth areas, digitization offers potential value creation in Kazakhstan's 'main business' – the commodity sector, but also for diversification and unlocking potential of other sectors, stimulating entrepreneurial activity, amplifying the structure of the economy given the diversity of opportunities.
- According to BCG's e-Intensity Index, Kazakhstan remains in the group of Aspirants i.e. a group of countries with still developing digital maturity. Despite overall improvements, Kazakhstan's position relative to other countries in the ranking remain unchanged, stagnating at the 50th-52nd position, indicating potential for further growth in this area.

BCG e-Intensity Index (2015)



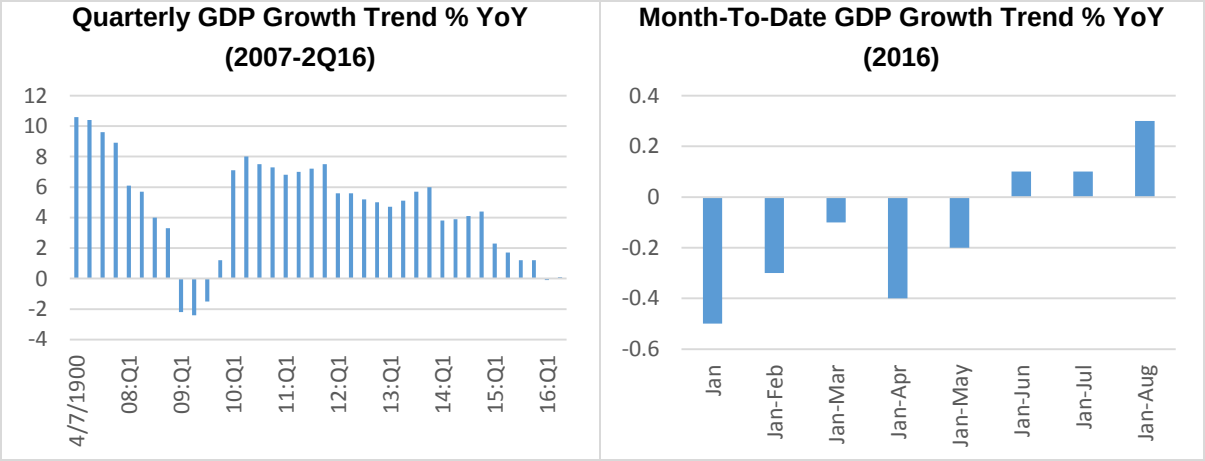
Source: BCG analysis

Section 2.0 Kazakhstan's Macroeconomic Outlook

Review of 2Q16 GDP growth, outlook 2016-2017

Kazakhstan's GDP growth increased by 0.1% in 1H16 as compared to a revised -0.2% in 1Q16. Despite registering a marginal growth rate in 1H16, the economy has rebounded gradually from a contraction of 0.5% in January 2016 to achieve a small positive recovery as at June 2016. Declines in private sector consumption and investment have been cushioned by the government's fiscal stimulus packages (transfers from the National Fund to the budget amounted to 6% of GDP in 2015 and 8% of GDP in 2016). Latest statistic release showed that growth has strengthened further to 0.4% in the first nine months of 2016. At this juncture, the official forecast for 2016 GDP growth remains at 0.5%, with upside potential of 1.0% provided that the funds allocated under the Nurly Zhol program and anti-crisis funds are disbursed fully for the remaining of this year. We maintain our in-house GDP growth projection of 0.8%-1.0% for 2016, premised on oil price expectations of USD43pb-USD45pb average for the year.

For 2017, GDP growth is expected to strengthen up to 2.0%, underpinned by low base effect, expectations of higher oil prices (USD48pb-USD50pb) and increase oil output.



Source: Ministry of National Economy, Bloomberg, Samruk Kazyna

A sectoral review of 1H16 results showed that growth momentum was dragged down by declines in industrial output, trade and communication services. The short-term indicator, which is a gauge for change in production indices of basic industries i.e. agriculture, industry, construction, trade, transport and communications (accounts for more than 60% of GDP), contracted by 0.7% in 1H16 (1Q16: -0.6%). The main economic industries that pushed down production in the first half were mining, telecommunications, and trade sectors.

In particular, the mining sector fell by 3.4% in 1H16 due to contraction in coal and lignite (-8.0%), oil (-3.6%), and iron ore (-22.2%) production. The decline in iron ore output was due to a drop in Chinese demand for iron ore and pellets, decrease in exports of pellets to Russia, and decline in world prices for iron ore.

The manufacturing sector recorded a growth rate of 0.5% in 1H16, up slightly from 0.3% in 1Q16. Metallurgy (+15.6%) and production of coke and petroleum products (+10.5%) subsectors contributed to this output increase. Non-ferrous metallurgy output increased by 19.5% and ferrous by 8.8%. There were some sub-segments that showed weak performance during the first half of 2016:

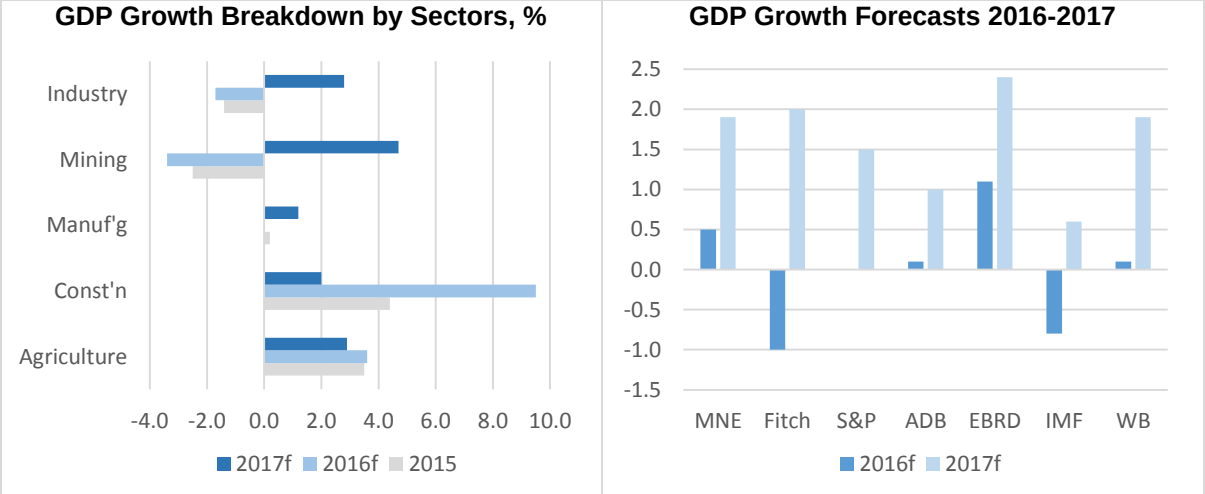
- The machinery-producing sub-segment demonstrated a 24.3% drop in production,
- The production of beverages decreased by 6.8% due to declining price competitiveness of the domestic producers compared to Russian food producers.

The services sector, in particular, trade, information and communications demonstrated a poor performance as well in 1H16. The 4.1% production decline in information and communication sector can be explained by decrease in cellular communications since the mobile services became cheaper. The wholesale trade index declined by 6.6% in January-June 2016. This drop was associated with decrease in foreign trade activity and the volume of industrial production in the country.

In January-June 2016, crude oil production declined by 3.6% and was equal to KZT3.3tln, and natural gas output increased by 6.1% reaching KZT80.2bln as compared to the same period of 2015.

In 1H16, electricity, gas, steam and air conditioning declined by 0.7%, electricity production alone declined by 0.9% to KZT494bln. This can be explained by the seasonal factors.

Construction output increased by 6.6% to KZT1,041bln in first half of 2016 supported by state programs.

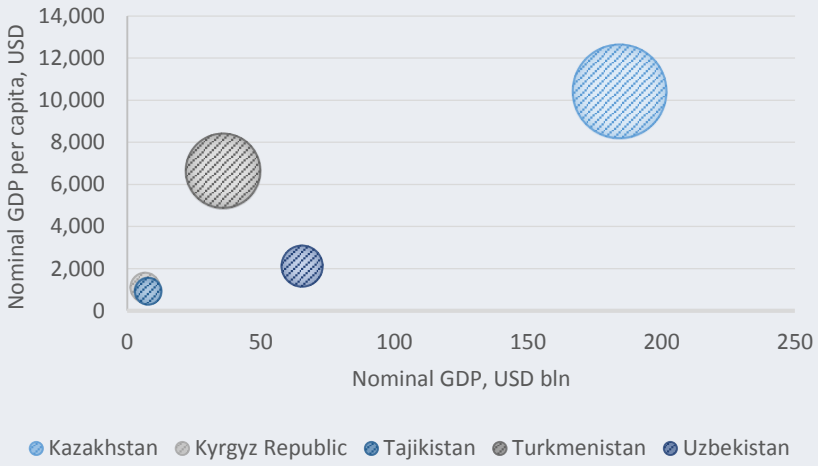


Source: Ministry of the National Economy, rating agencies, multilateral organizations, Samruk Kazyna

Box 1: Kazakhstan's macroeconomic dynamics vs. CIS peers

Kazakhstan's economy is the largest in Central Asia and the second largest after Russia in the Commonwealth Independent States (CIS). Nominal GDP value stood at USD184.4bln as at 2015. Consequently, Kazakhstan's GDP per capita was the highest in the region at USD10,508 in 2015, above Russia's USD9,057. Other countries of the region, Turkmenistan, Uzbekistan, Kyrgyz Republic and Tajikistan, have significantly smaller GDP per capita of USD6,655, USD2,115, USD1,113 and USD922 respectively.

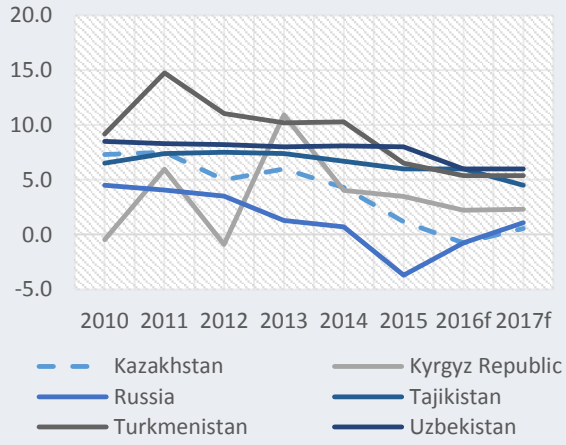
Nominal GDP and GDP per capita (2015)



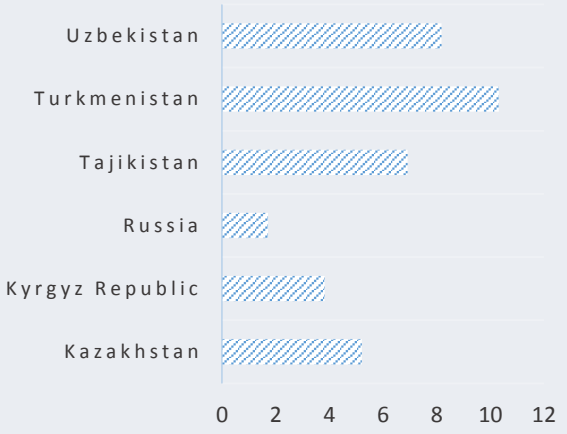
Source: IMF, Samruk-Kazyna

Kazakhstan's GDP growth remains positive and relatively high, averaging at 5.2% per annum between 2010 and 2015. While growth was lower than in some other Central Asian economies, Kazakh economy performed commendably well considering its relative size and the level of development. The only other comparable country, Russia experienced significantly lower GDP growth of 2.0% per annum over the same period.

GDP growth, % (2010-2017f)



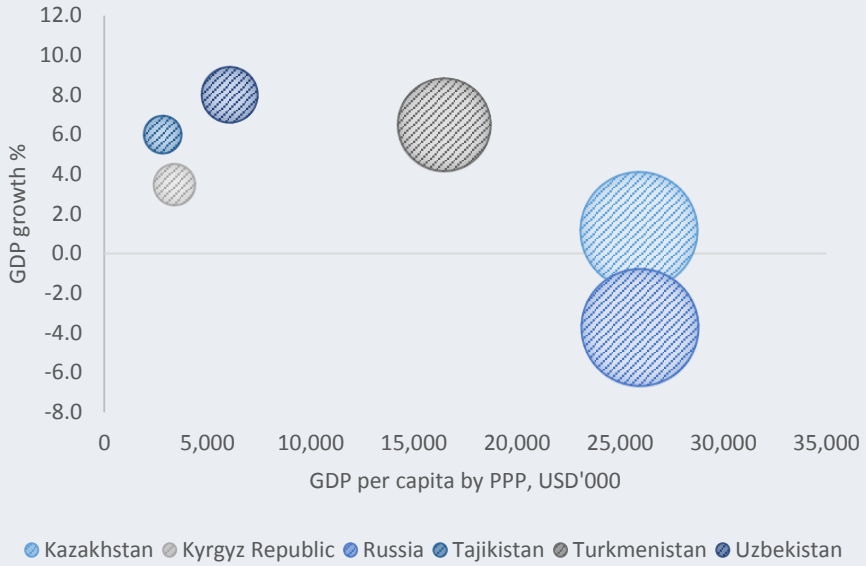
Average GDP growth, % (2010-2015)



Source: IMF, Samruk-Kazyna

Kazakhstan's GDP per capita by purchasing-power parity (PPP), estimated at USD25,910 is marginally smaller than in Russia (USD25,970), but significantly higher than neighboring peers. GDP per capita by PPP in Kazakhstan is more than 1.5 times higher than in Turkmenistan, 4 times higher than in Uzbekistan, 7.5 times higher than in Kyrgyz Republic and 9 times higher than in Tajikistan.

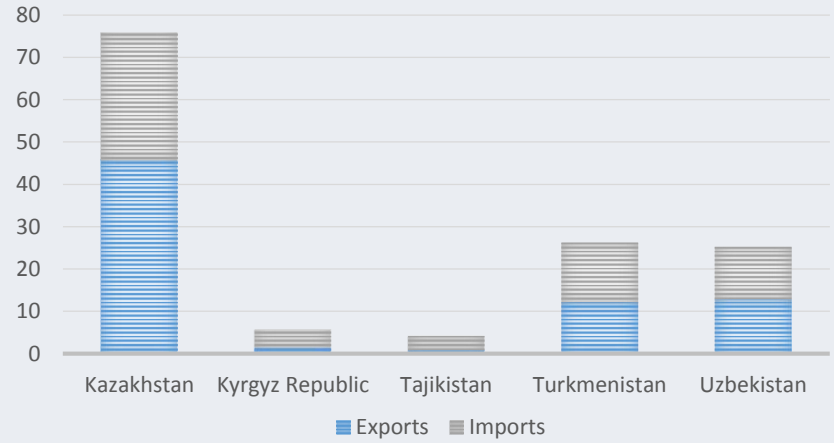
GDP Growth vs. GDP per capita by PPP (2015)



Source: IMF, Samruk-Kazyna

On external trade, Kazakhstan's trade turnover amounted to more than USD75bln in 2015, or 41.2% of GDP. Exports reached USD45.7bln and imports amounted to USD30.2bln. Both exports and imports are larger than the trade turnover of Kyrgyz Republic, Tajikistan, Turkmenistan and Uzbekistan combined. Kazakhstan's main trade partners are Russia, China and the EU.

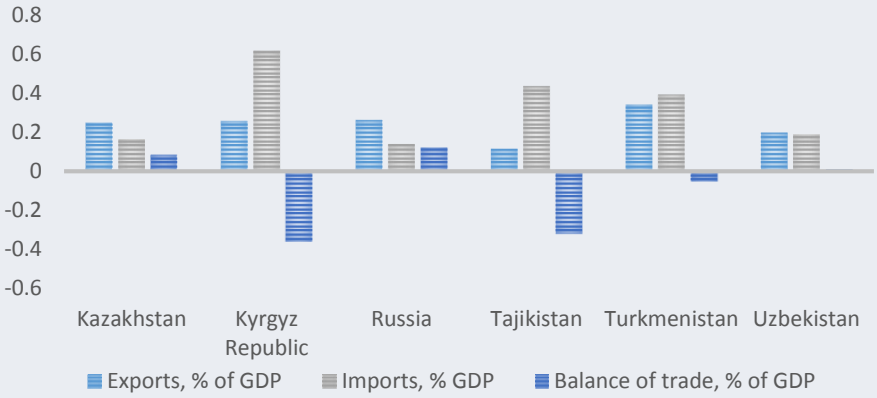
Exports and Imports, USD mln (2015)



Source: Statistics committees of Kazakhstan, Kyrgyz Republic, Russia, Tajikistan, Turkmenistan, Uzbekistan, UNCTAD, Samruk-Kazyna

Kazakhstan is the only country in the region, except Russia, that holds a large and consistent trade surplus. Peer countries are more import-dependent and have external trade deficits. Kazakhstan's main export destinations are Italy, China, Switzerland, Russian Federation and the Netherlands.

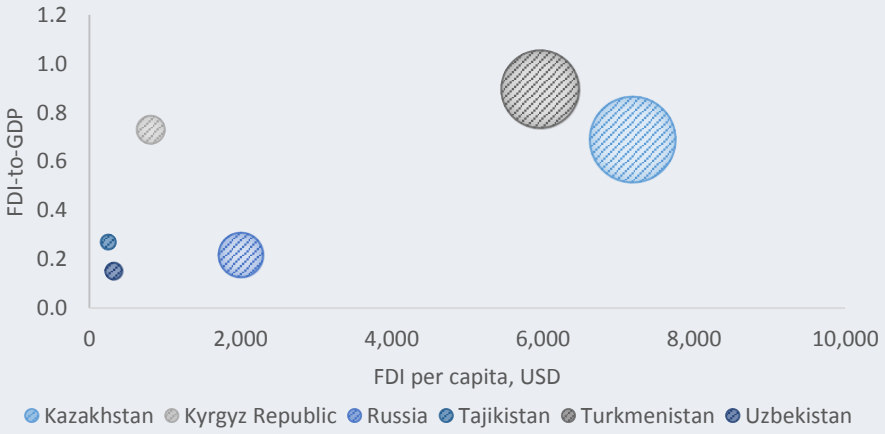
Exports, Imports and trade turnover, % of GDP (2015)



Source: Statistics committees of Kazakhstan, Kyrgyz Republic, Russia, Tajikistan, Turkmenistan, Uzbekistan, UNCTAD, Samruk-Kazyna

Kazakhstan has attracted USD232bln gross foreign investments since its independence in 1991, leading other CIS countries. As such, Kazakhstan ranks first in terms of its FDI stock per capita, and is only second to Turkmenistan in terms of FDI stock to GDP ratio. This is significantly higher, compared to peers. Despite unfavorable global investment climate, which decreased foreign investment into emerging markets and transitional economies, Kazakhstan maintained its attractiveness for foreign investors. Consequently, FDI stock as of 1H16 amounted to USD132.5mln. Total investment stock, which includes portfolio and other investments, amounted to USD209.3bln. Netherlands remains by far the largest investor in Kazakhstan, other major investors include the US, France, Russia and China. Government policy has been encouraging foreign investment with measures such as reduction and in some cases waiver of taxes for five years, state subsidies, partial or total exemption from duties and taxes on equipment and other materials.

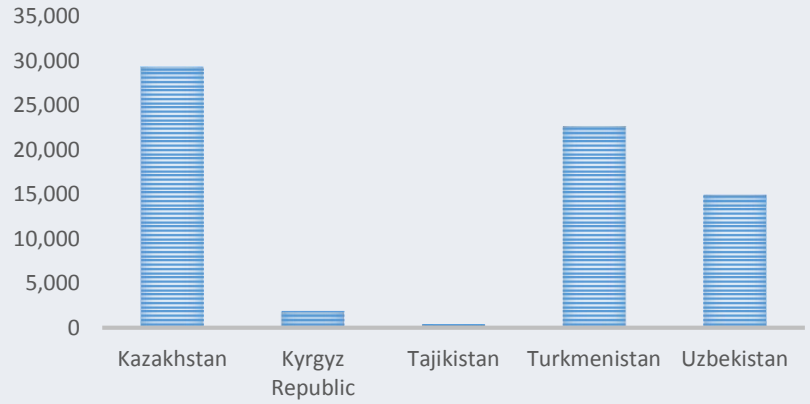
FDI stock per capita and FDI stock to GDP ratio (1Q16)



Source: National banks of Kazakhstan, Kyrgyz Republic, Russia, Tajikistan, Turkmenistan, Uzbekistan, UNCTAD, Samruk-Kazyna

Kazakhstan also holds the largest amount of reserves. Reserves have been growing throughout 2016, as tenge appreciated and stabilized gradually. According to Guidotti-Greenspan rule, reserves should be sufficient to cover all short-term external obligations. For Kazakhstan, reserve to short-term debt ratio is 129.2 as of 1H16. Another measure of reserve adequacy is import coverage. Kazakhstan's reserves are sufficient to cover 11.6 months of imports. Kazakhstan's import coverage is significantly higher than in Kyrgyz Republic (5.6 months) and Tajikistan (1.5 months), but smaller, compared to Turkmenistan (19.3 months) and Uzbekistan (14.5 months).

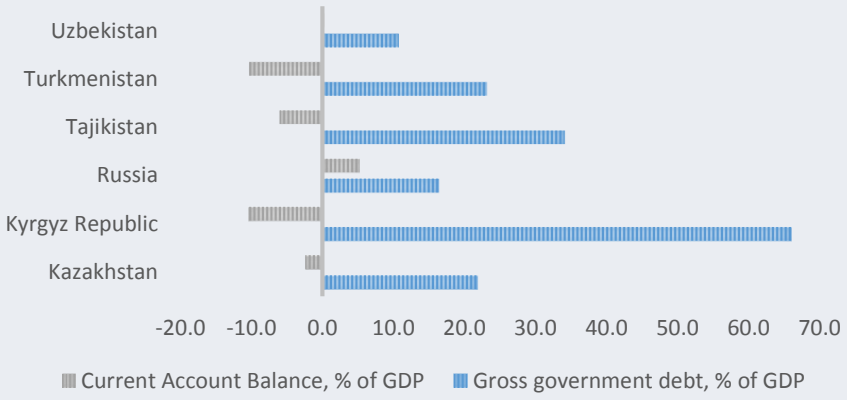
FX and gold reserves, USD mln (2015)



Source: National banks of Kazakhstan, Kyrgyz Republic, Russia, Tajikistan, Turkmenistan, Uzbekistan, UNCTAD, Samruk-Kazyna

Nevertheless, Kazakhstan's fiscal and external position is much more stable compared to its peers. Government debt remains low and current account deficit is minimal. Other countries in the region, excluding Russia and Uzbekistan, have higher levels of government debt. Gross government debt in the Kyrgyz Republic reached 66% of GDP, while its current account deficit amounted to 10.4% of GDP.

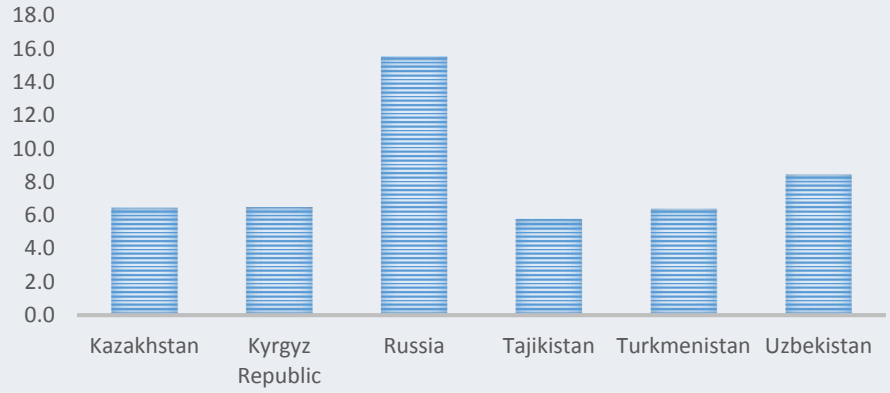
Gross debt and current account balance, % of GDP (2015)



Source: IMF, Samruk-Kazyna

On the general price level, Kazakhstan's average inflation rate remained stable in 2015. Russia had the highest inflation, due to a massive depreciation of the ruble. Same effect was evident in Kazakhstan between late-2015 and early-2016, however the devaluation effect is expected to taper off by end-2016.

Average inflation rate, % (2015)



Source: IMF, Samruk-Kazyna

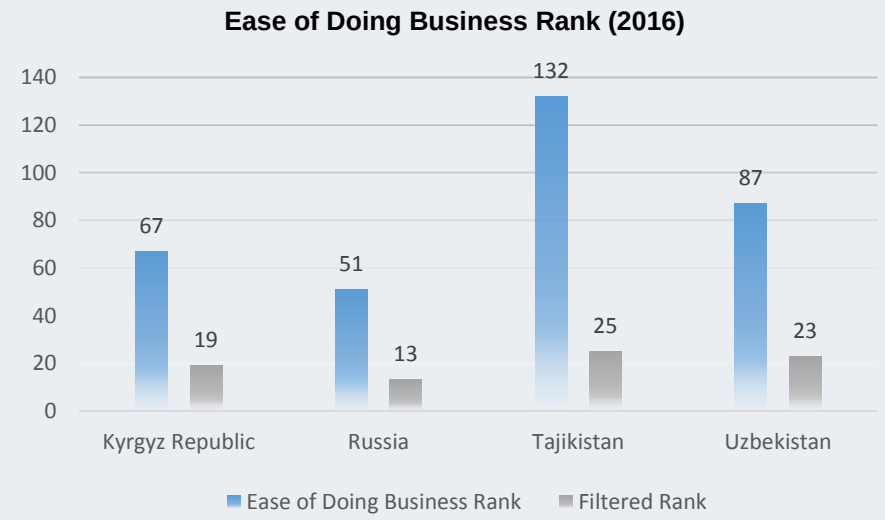
Since its independence, Kazakhstan has actively pursued a program of economic reform designed to establish a free market economy. For much of the past 15 years, Kazakhstan was deemed by many as having one of the best investment climates in the region. In 2002, Kazakhstan became the first sovereign among CIS countries to receive an investment-grade credit rating from an international rating agency i.e. Standard & Poor's. The country's strong fiscal position is reflected in international rankings.

Sovereign Ratings Comparison, as at 13 October 2016

Country	FC rating	Economic	External	Fiscal/ budget	Fiscal/ debt
Kazakhstan	BBB-/Negative/A-3	Neutral	Neutral	Strong	Strong
Kyrgyzstan	B/Stable/B	Weak	Weak	Weak	Neutral
Russia	BB+/Negative/B	Weak	Neutral	Neutral	Strong

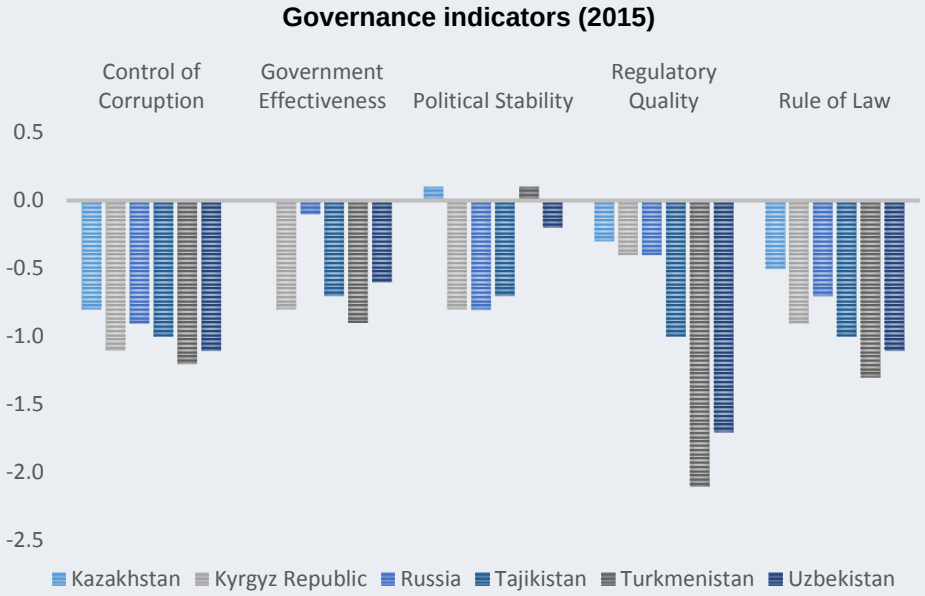
Source: S&P, Samruk-Kazyna

The World Bank ranks Kazakhstan in the 1st place in terms of ease of doing business among CIS countries, and the 9th place within Europe and Central Asia. Investors' protection, Index of transaction transparency, Index of manager's responsibility and Index of investment protection are well above the average for Eastern Europe and Central Asia. The government has implemented a number of pro-business reforms that have been recognized by various international organizations.



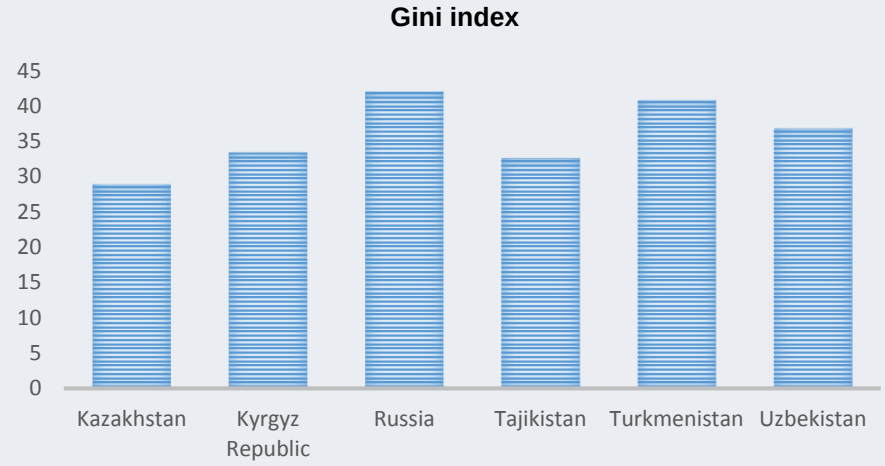
Source: World Bank Group, Samruk-Kazyna

Kazakhstan is the only country in the region that has a positive political stability index, calculated by the World Bank. Kazakhstan also outperforms its peers in terms of control of corruption, government effectiveness, regulatory quality and rule of law. Investors in Kazakhstan note economic, political and social stability as one of the most attractive factors for investment.



Source: World Bank Group, Samruk-Kazyna

Kazakhstan has a more inclusive growth, compared to its peers. Revenues are more-or-less evenly distributed among the population. In this regard, Kazakhstan's Gini index, which measures income distribution, is the smallest in the region and one of the lowest in the world.



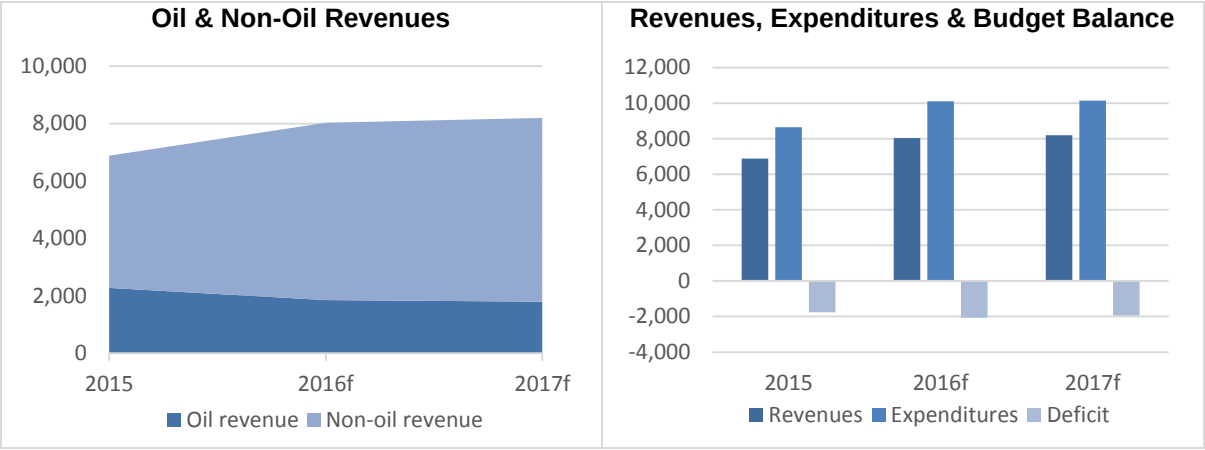
Source: CIA Factbook, Samruk-Kazyna

Fiscal position

The consolidated budget for 2016 was revised earlier this year due to overall economic slowdown and the introduction of floating export custom duties on crude oil. Adjusted revenues forecast (excluding transfers from the National Fund) for 2016 now amounts to KZT8tln. Meanwhile, guaranteed transfers from the National Fund are expected to be KZT3.2tln, due to the depreciation of the tenge and the revision of expenditures within the Nurly Zhol program. Nurly Zhol provides counter-cyclical spending on infrastructure while the government reduced or delayed other non-priority budget capital expenditures.

Budget expenditures projection was increased by KZT1tln to KZT10.1tln. The overall deficit of the republican budget for 2016 is expected to be KZT2.07tln, or at -4.7% of GDP (previous estimate was -3.3%). In 2015, budget deficit was at 4.3% of GDP. Non-oil deficit of the consolidated budget (excluding oil revenues and expenditures on national debt service) is now expected to amount to -8.8% of the GDP. For 2017, budget deficit is expected to improve to KZT1.94tln or -4.0% of GDP on the back of higher GDP growth and government revenues.

Consolidated Budget Position, KZT bln



Source: Ministry of Finance, Samruk Kazyna

Despite falling oil revenues and the overall economic slowdown, Kazakhstan's fiscal position remains resilient to support fiscal stimulus programs. Resources of the National Oil Fund allow the government to execute massive infrastructure projects (assets of the National Fund stood at USD75.9bln as at end of 2015). According to official projections, even with oil prices at a conservative level of USD35pb, the National Fund will still amount to USD72.6bln or 58.9% of the GDP as at end-2016. This provides some fiscal space, since government debt including government guaranteed debt remains relatively low at USD12.9bln as at end-1Q16.

Inflation and monetary policy

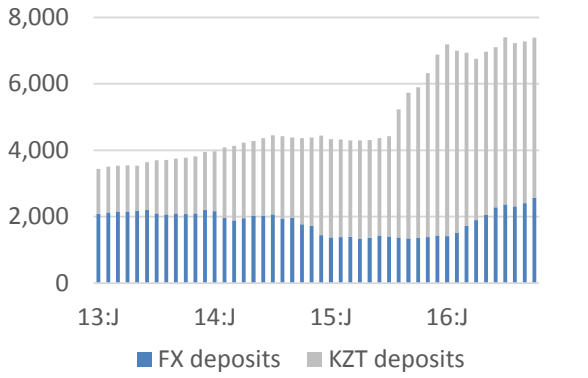
In line with our earlier expectations of monetary policy for stimulus, National Bank of Kazakhstan (NBK) cut its base rate by 200bps from 17% to 15% on 5 May 2016, as the USD-KZT exchange rate and inflation risks subsided. Subsequent rate cuts followed on 11 July 2016, 3 October 2016 and 14 November 2016, whereby the base rate was further reduced by 200bps to 13%, 50bps to 12.5% and 50bps to 12% respectively. The decisions on the base rate were taken premised on the following factors:

- Inflation currently corresponds to the expectations of the NBK, with the risks of acceleration being minimal under current circumstances. NBK anticipates inflation to achieve the upper limit of its official target of 6%-8% band by end-2016. Taking into account the time lag effect of the base rate on inflation, usually up to one year, the decision to cut the base rate reflects NBK's confidence that inflation will remain within the target band over the next 12 months and up until end-2017, in the absence of negative shocks.

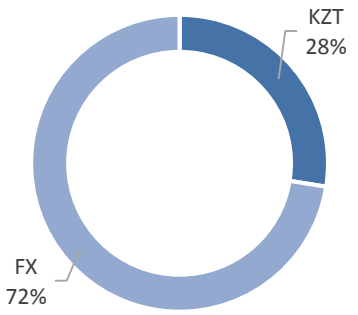
- The USD-KZT exchange rate has stabilized since March 2016, reflecting the combination of an improved external and domestic environment in the past few months, with the exception of the short-term turbulence in the global financial markets created by the UK exit from the European Union. Direct risks of Brexit are estimated to be limited on Kazakhstan. Global oil prices improved since March 2016, providing the added support needed by the tenge. Similarly on the domestic front, improved economic stability reduced the negative expectations on currency risks. These developments have contributed to the conversion of foreign currency denominated assets to tenge-denominated assets in both the foreign exchange cash market and the bank deposit market.

Total deposits in the banking sector grew by 7.4% in first ten months of 2016 to reach KZT7.39tln as at October 2016. Even though foreign currency denominated deposits more than doubled the amount of tenge deposits, tenge deposits grew by 79.7% in the first ten months of 2016, while FX deposits fell by 11.6%. Tenge and FX deposits stood at KZT2.58tln and KZT4.82tln respectively as at October 2016. The rebound in tenge deposits since February 2016 was supported by recovery in global oil prices and the changes in interest rates in favor of local currency deposits (interest rates on tenge deposits were raised from 10% to 14%, while FX deposits were reduced from 3% to 2% effective 1 February 2016).

Tenge vs. FX Deposits, KZT bln



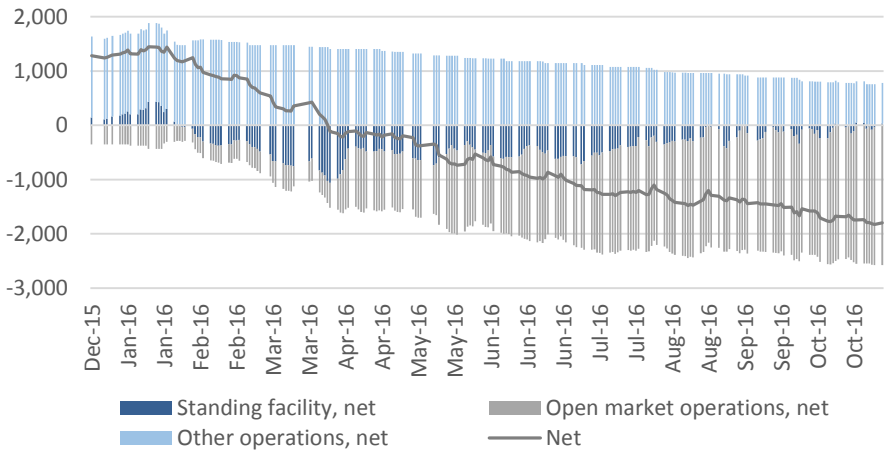
Proportion of Tenge vs. FX Deposits



Source: National Bank of Kazakhstan, Samruk Kazyna

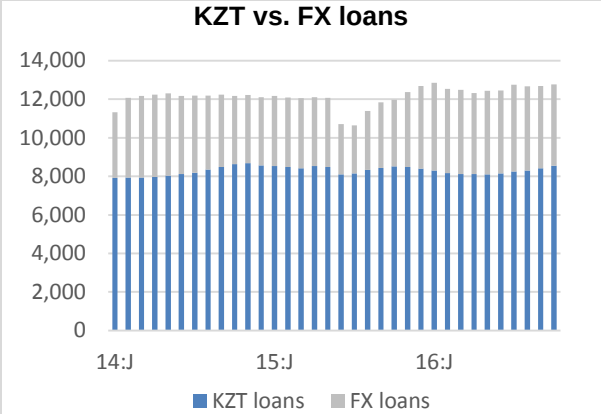
- The domestic money market has been experiencing structural liquidity surplus condition, with the NBK continues to actively conduct operations to absorb excess liquidity since March 2016. The net volume of tenge liquidity injected into the financial system amounted to KZT1,278bln in December 2015 and KZT1,438bn in January 2016, before declining to KZT849bn in February 2016. This was followed by the excess of tenge liquidity in March 2016 leading to an absorption of KZT1,224bln. NBK's volume of operations in the money market in the form of withdrawn liquidity continued to grow from KZT1,545bn in April 2016 to KZT2,576bln in October 2016. NBK absorbs liquidity from the market through notes, repo auctions and deposits.

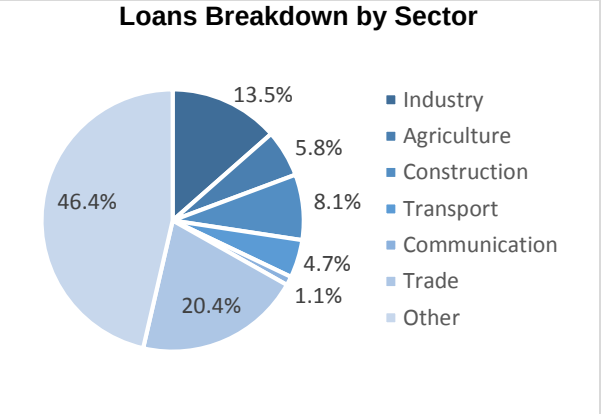
Open position of NBK's operations, KZT bln (2015 – 30 October 2016)



Source: National Bank of Kazakhstan, Samruk-Kazyna

Despite this, excess liquidity however did not result in credit growth. The still high dollarization level of deposits and ensuing currency risks prevent banks from expanding loans to businesses and individuals. On a monthly basis, the amount of tenge-denominated credit has been growing gradually since June 2016 after the base rate cuts. Despite this, credit to the economy grew by a marginal 0.76% year-to-date to KZT8,543.85bln as at October 2016 vs. KZT8,401.11bln as at December 2015. Credits are mostly concentrated in sectors such as retail, transportation and other sectors, while industry only holds 13.5% of the aggregated credit portfolio. Lack of long-term financing is one of the major obstacles preventing growth of non-oil industries.



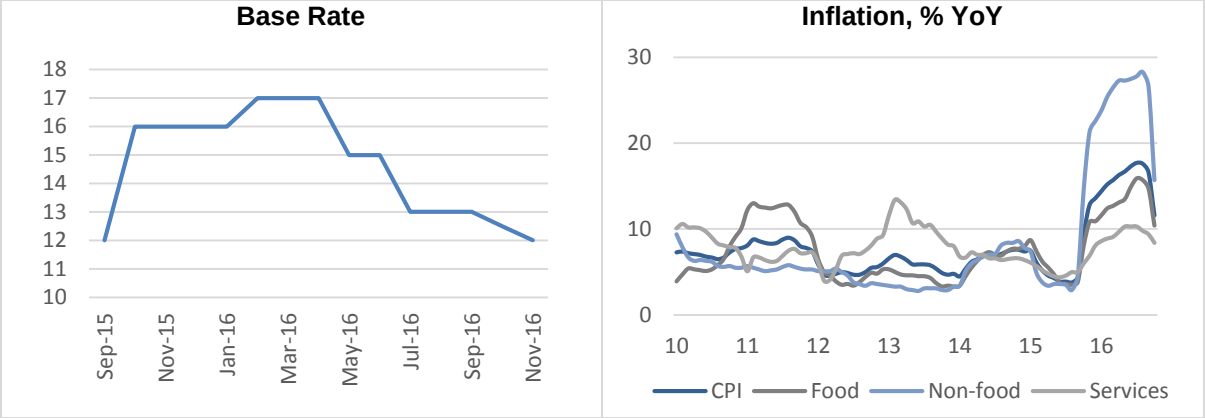


Source: National Bank of Kazakhstan, Samruk-Kazyna

NBK highlighted that further actions on the base rate will depend on the actual inflation, its deviation from the forecast and currency preferences of economic agents. Further easing of the monetary policy moving forward would depend on the presence of sustained signal indicating the convergence of inflation to the target range as well as a stable growth of tenge deposits. The next decision on the base rate will be on 9 January 2017.

Overall, we welcome the NBK's move in cutting the base rate which would bode well for domestic demand, business investments and the general economic activities. The index of business sentiment, based on the survey of top management of real sector enterprises, moved into positive territory, signaling a gradual recovery in economic activity. The cut in the base rate has stimulated banks to lower market rates since July, which will be crucial in lifting the demand for resources and the expansion of credit activities moving forward.

On the general price level, inflation has stayed elevated at 15.9% average in 10M16. Year-on-year consumer prices are expected to ease significantly in 4Q16 when the base effect diminishes in the fourth quarter. As such, inflation will average at more realistic level of 13%-14% for 2016. Take note that official projection for inflation is based on a one-point expectation i.e. the level anticipated as at December 2016 (6%-8%), and this does not reflect the elevated levels of CPI in the first ten months of 2016.



Source: Bloomberg, Samruk Kazyna

Note: CPI in 10M16 – January 14.4%, February 15.2%, March 15.7%, April 16.3%, May 16.7%, June 17.3%, July 17.7%, August 17.6%, September 16.6%, October 11.6%

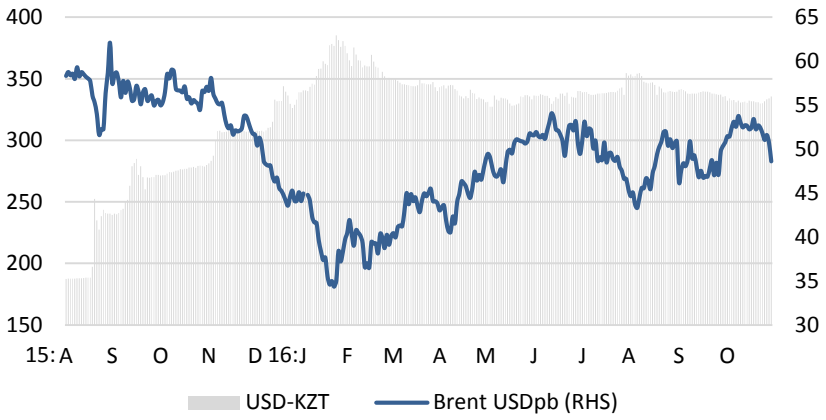
USD-KZT exchange rate

Between early-March and end-June 2016, volatility in the USD-KZT exchange rate has reduced significantly compared to the trends observed in January-February 2016. The USD-KZT exchange rate was last traded at 339.18 on 30 June 2016, having averaged at 335.37 in 2Q16. These compared to the closing rate of 344.59 as at 31 March 2016 and average of 346.11 in 1Q16. Factors that contributed to stabilization of the USD-KZT exchange during these period include the following:

- Stabilization in oil prices have mitigated downward pressures on the tenge - Global oil prices have rebounded from their lows in January 2016, encouraged by a slew of data releases. The US dollar weakness has also provided some support to the oil markets between March and mid-July 2016.
- US interest rate expectations – Investors have pushed back the timing on an interest rate hike in most of 2016. Global economic uncertainty, exacerbated by Brexit, and erratic readings on domestic job creation are pushing policymakers to wait for further clarity and confidence that domestic economic health and inflation are firming. Delay in the US monetary policy normalization makes emerging market assets attractive vs. dollar assets.

Catching up with the declines in global oil prices that started in the third week of July 2016, the USD-KZT exchange rate however fell by 5.1% to close at 354.12 on 26 July 2016, after touching an intraday high of 354.45. This was the biggest decline since December 2015, and the weakest level in five months. Subsequently, the tenge returned to stability after mid-August as global oil prices rebounded.

USD-KZT vs. Brent Oil Trends (2015-2016YTD)

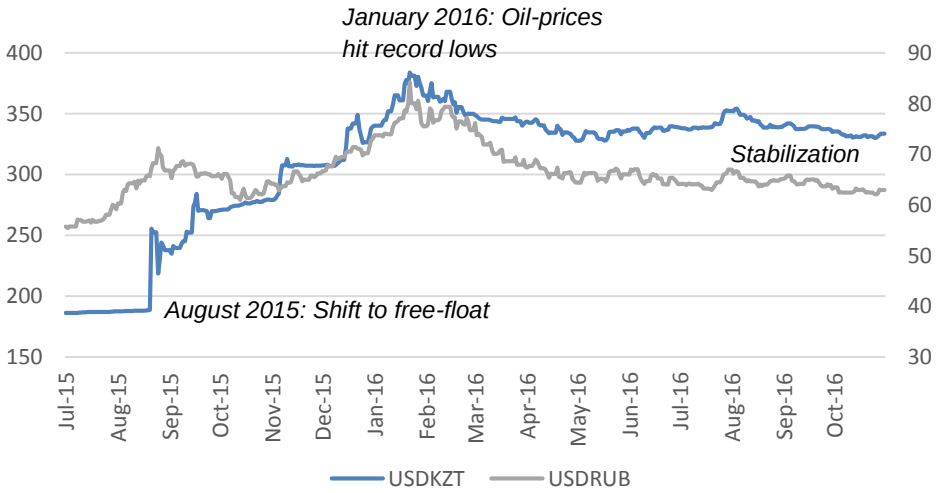


Source: Bloomberg, Samruk Kazyna

We caution that volatility in global oil prices may cause the tenge to fluctuate in both directions. However, any movement of the tenge would not be sharp as the regulator plans to participate in FX market to smooth out significant fluctuations. In August 2016, NBK sold almost USD146mln on the exchange market. The regulator did not intervene in the FX market in September and October as the tenge stabilized along with stronger oil prices.

Apart from global oil prices, movement in the currencies of major trading partners also impacted the tenge. Since the shift to a free-floating regime in August 2015, the USDKZT exchange rate has closely mirrored that of USDRUB exchange rate. Russia is one of Kazakhstan's most important trade partners and to ensure competitiveness, the country's authorities have maintained a RUBKZT exchange rate of approximately 1:5 ratio.

USDKZT vs. USDRUB Exchange Rate Trends (June 2015 – 31 October 2016)



Source: National Bank, Bank of Russia, Samruk-Kazyna

As at 31 October 2016, the USD-KZT exchange rate closed at 335.48, 1.5% higher than end-December 2015. The USD-KZT exchange rate is expected to average at 342 in 2016, ranging at 340-345 in 2017.

USD-KZT Exchange Rate Projections 2016-2017

Price	1Q16 average	2Q16 average	3Q16 average	2016YTD average	2016f average	2017f average
USD-KZT	346.11	335.37	341.26	342.86*	**342^**	**340-345^**

Source: Bloomberg, Samruk Kazyna

** represents year-to-date average as at 31 October 2016*

^ represents in-house projection by Samruk Kazyna based on data available as at 31 October 2016

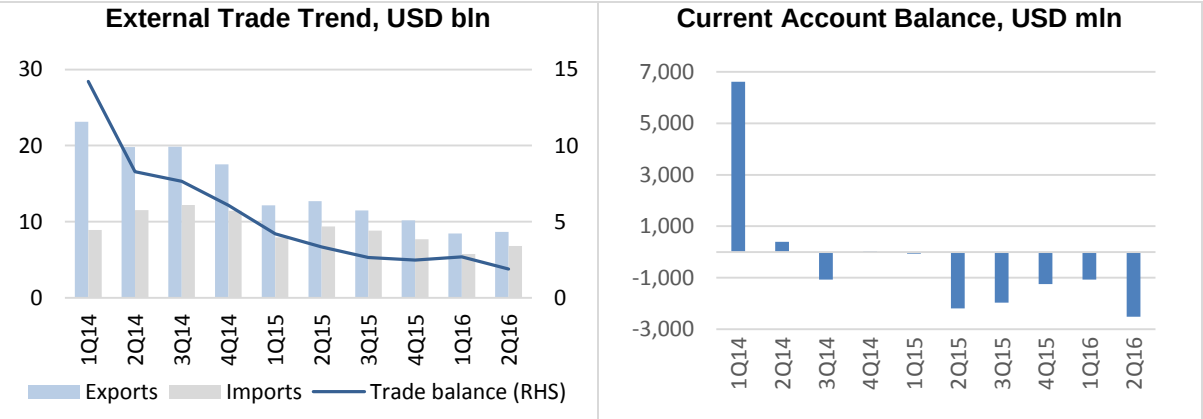
External positions

The contribution of net exports to GDP fell significantly to 4.0% in 2015 compared to 13.9% in 2014. This was due to reduced export revenues (fuels and energy account for 72.7% of the country's exports in 2015) and generally weaker trade environment. Devaluation in the currencies of key trade partners also reduced Kazakhstan's trade competitiveness, further impacting export revenues. In US dollar terms, exports decreased by 42.3% and imports fell by 22.7% in 2015 compared to 2014.

In 2Q16, total exports rebounded by 3.0% QoQ to USD8.68 billion vs. USD8.43 billion in 1Q16. This was an improvement from the -17.0% QoQ recorded in the first quarter, supported by higher global oil prices in the second quarter (Brent averaged at USD48.01pb in 2Q16 vs. USD39.33pb in 1Q16).

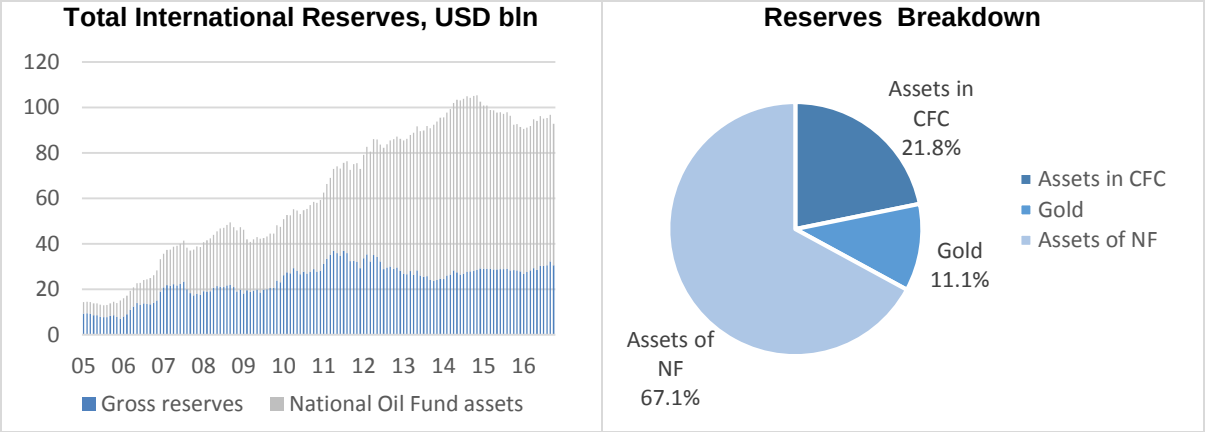
Similarly, imports turned around to increase by 18.1% QoQ to USD6.79 billion in 2Q16 from USD5.75 billion in 1Q16, mainly due to low base effect of the previous quarter and as the tenge stabilized in the second quarter. This compared to a decline of 25.2% QoQ registered in 1Q16. As a result, trade surplus narrowed by 29.5% QoQ to USD1.89 billion in 2Q16 from USD2.68 billion in 1Q16. Given a narrower trade surplus and increased services trade deficit, current account deficit widened to USD2.52 billion in 2Q16 vs. USD1.07 billion in 1Q16.

The country's current account first showed deficit of USD955.2 million in 3Q14, returning to a marginal surplus of USD14.1 million in 4Q14. Combination of weakening exports and declining trade competitiveness resulted in current account deficit of USD5.82 billion in 2015, the first since 2009, and compared to a surplus of USD6.38 billion in 2014. This trend is expected to continue in 2016, with official projection of current account deficit being 4.5% of GDP.



Source: National Bank of Kazakhstan, Bloomberg, Samruk Kazyna

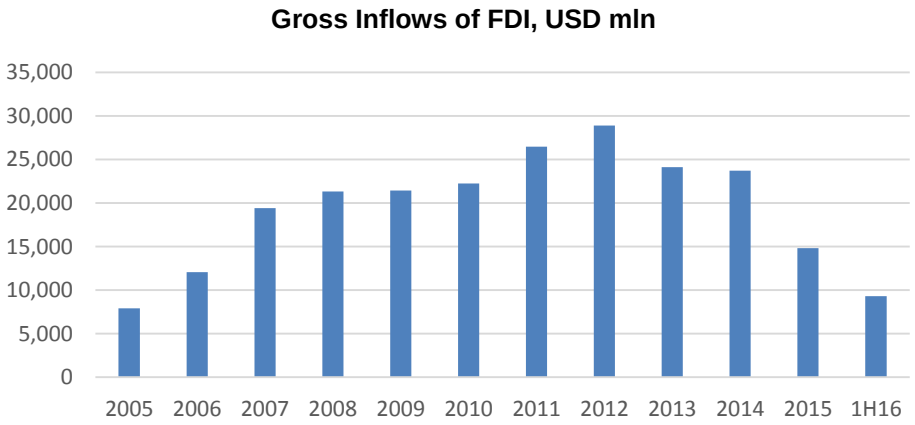
On reserves, Kazakhstan's official international reserves comprise of foreign-exchange assets at the NBK and in the National Oil Fund. Total international reserves grew by 1.5% or USD1.37bln in 10M16 to USD92.75bln as at October 2016. This was attributed to a 9.6% or USD2.67bln increase in FX reserves at the NBK to USD30.54bln, and a stable FX reserves of USD62.21bln at the National Oil Fund. NBK's repayment of FX swaps to commercial banks in 10M16 (at KZT748bln or approximately USD2.2bln) improved the quality of these reserves.



Source: National Bank of Kazakhstan, Samruk-Kazyna

Foreign direct investment

Gross inflows of FDI fell to USD14.83bln in 2015, from USD23.73bln a year earlier, reaching their lowest level since 2006, due to regional and global economic slowdown. Over 1H16, foreign direct investment to Kazakhstan increased by USD9.29bln and accumulated at USD231.67bln since 2005. Inflow of investments went to traditional sectors, such as mining with total investments of USD61.42bln or 26.5% (mainly in the extraction of crude petroleum and natural gas), as well as investments into professional, scientific and technical activities at USD85.07bln or 36.7% (majority relates to geological exploration and prospecting activities). The oil and gas, natural resources and extractive industries continue to remain the most attractive sectors for investments, comprising more than half of Kazakhstan's accumulated FDI inflows to-date. Nonetheless, the manufacturing, wholesale and retail trade, financial services, and information and communication attracted commendable investments of USD27.57bln (11.9%), USD20.06bln (8.7%), USD12.03bln (5.2%) and USD4.55bln (2.0%) respectively, reflecting relative success of Kazakhstan's efforts to diversify the economy.

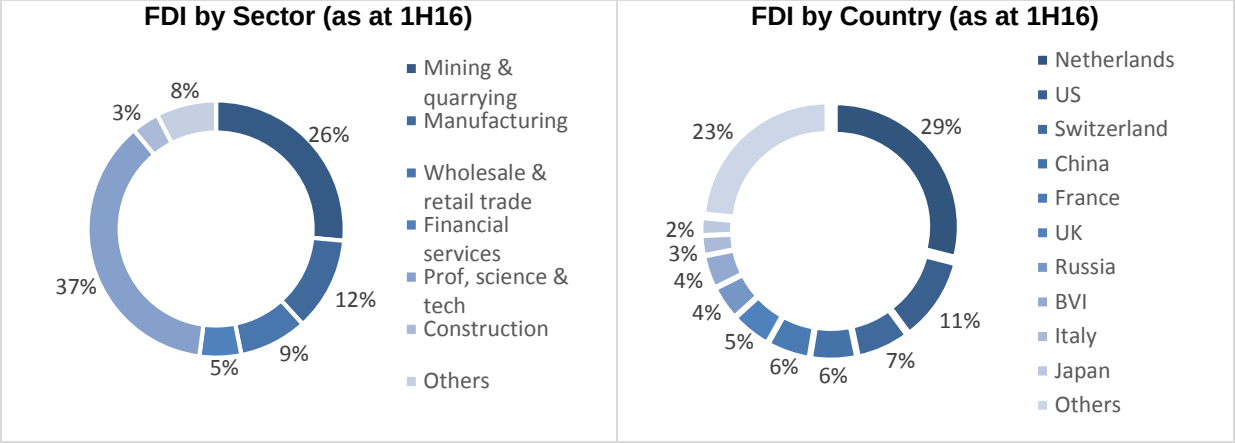


Source: National Bank of Kazakhstan, Samruk-Kazyna

Netherlands remains the largest investor in Kazakhstan with investments amounted to USD65.64bln as at 1H16, while the US has USD24.68bln investments in the country. Other major investors include Switzerland, France, UK, China, and Russia. Kazakhstan has increasingly been receiving FDI from China namely within the Chinese “One Belt, One Road” initiative.

New Asian partners such as China, India and even Iran are replacing Kazakhstan's traditional investment partners. However, they have not been able to fully substitute Russia and western investors, many of which have been deterred by lower oil prices, weakening domestic and regional economic cycle.

Kazakhstan has a high ranking in terms of investor protection, according to the Doing Business report. Index of transaction transparency, Index of manager’s responsibility and Index of investment protection are well above the average for Eastern Europe and Central Asia. Government policy has been encouraging foreign investment with measures such as reduction and in some cases waiver of taxes for five years, state subsidies, partial or total exemption from duties and taxes on equipment and other materials.

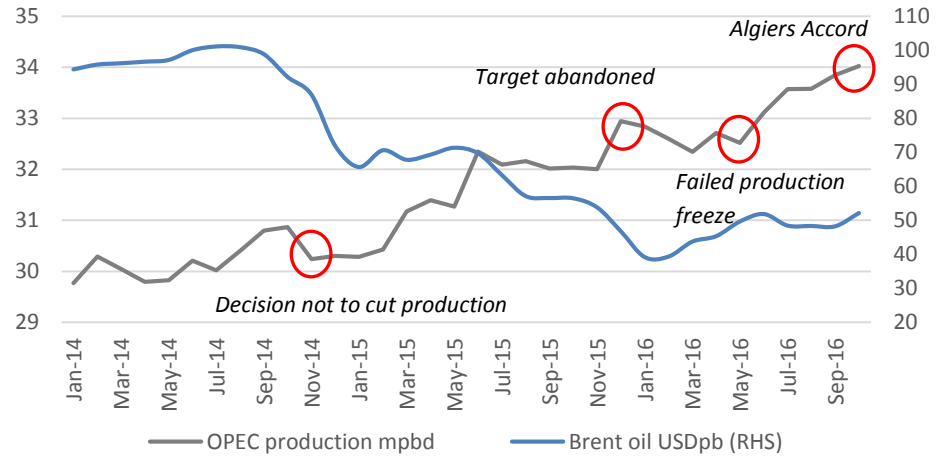


Source: National Bank of Kazakhstan, Samruk Kazyna

Global oil market

Global oil prices staged a strong recovery since their January 2016 lows, gaining up to 56% to their seven-month high of USD53.26pb on 8 June 2016. Delay in the US interest rate hike contributed to the dollar weakness this year, providing some support to the oil markets up until mid-July 2016. The WTI for September delivery closed at USD49.01 per barrel as at 30 June 2016, upped 17% from USD41.90pb as at end-1Q16. Meanwhile, Brent for October settlement last traded at USD50.16 per barrel as at 30 June 2016 and was 18.7% higher compared to USD42.27pb as at end-1Q16.

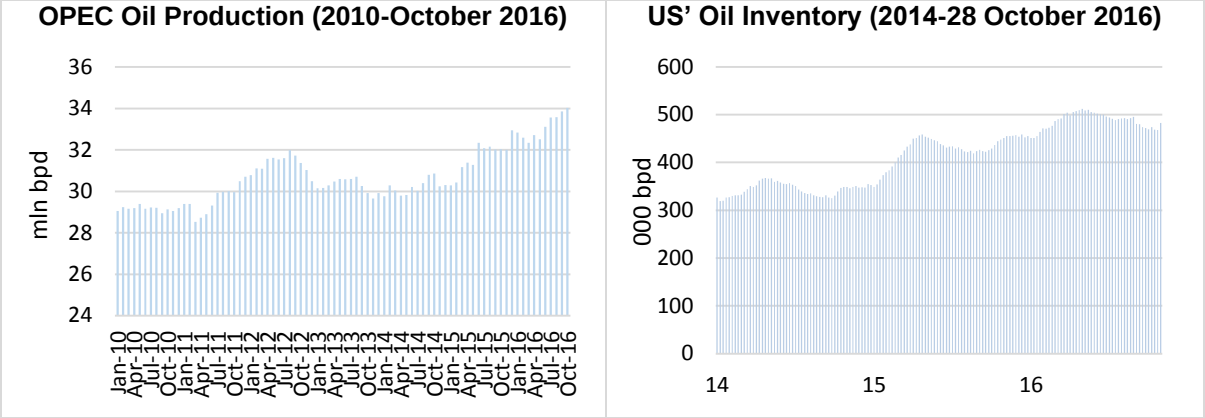
OPEC Oil Production vs. Brent Oil (2014-31 October 2016)



Source: Bloomberg, Samruk Kazyna

However in August 2016, crude oil prices plunged to close at USD39.51pb on 2 August 2016, the first time that prices have dropped below USD40pb in four months. The selling pressures have been driven by realization that global oil oversupply remains intact, compounded by increasing production and stockpiles from the US and OPEC members. Significant upside potential to global oil prices moving forward will be limited by the following factors, mostly supply related:

- US oil explorers have boosted the number of active rigs by 125 since early-June to 441 as at 28 October 2016, with 57 being added in between August and October.
- US crude stockpiles were at 482.58 million barrels for the week ended 28 October 2016, more than 100 million barrels above the five-year average. Meanwhile, US crude production stood at 8.52 million barrels a day for the week ended 28 October 2016, as drillers put rigs back to work.
- While OPEC outlined an accord to reduce production by as much as 700,000 barrels a day, oil output from Iraq and Iran rose to record highs in October 2016, with cumulative OPEC oil production above 33 mln barrels per day for a fifth consecutive month. As such, the Middle East market share of global oil supplies rose to 35%, the highest since 1970s. Meanwhile, Nigeria added 170,000 barrels a day and Libya pumped an extra 180,000 in October.
- Russia's oil output rose to post-Soviet high of 11.3 mln barrels per day in October, according to the Energy Ministry, CDU-TEK unit.
- The Bloomberg Dollar Spot Index, which measures the dollar vs. major currencies, advanced by 1.9% since end-June to reach 1,208.25 as at 28 October 2016. A stronger dollar reduces the appeal of dollar-denominated commodities.



Source: Bloomberg, Samruk Kazyna

Expect global oil prices to remain volatile in the near-term, underpinned by moderate global demand, oversupply concerns and uncertainty associated with the implementation of OPEC's output cut. Oil demand has picked up since January 2016, but the take-up pace has been slower than before compared to supply growth. Demand was then driven by China's oil purchases for its strategic petroleum reserves, which has now reach full capacity and hence has seen demand tapering off. According to the IEA report, refinery runs growth was 60% higher than refined product demand growth in 1Q16. Despite regular upward revisions to oil demand growth, there are signs that demand momentum is easing, putting downward pressures on oil prices.

On the supply front, OPEC agreed in Algiers that it would limit supply in a bid to reduce global oil stockpiles and boost prices. It set up a committee to work out the necessary output cuts among members over the next two months, with recommendations to be made at its next meeting in Vienna on 30 November. Within hours of the announcement, Iran and Nigeria declared themselves exempt from any commitment to freeze supply while Iraq rejected OPEC's own estimates of how much crude the country is producing. Prior to the Algiers meeting, Libya stated that its output was reduced by years of internal conflict and hence did not expect to be bound by the deal. Subsequently, Russia announced that it is willing to support OPEC and participate in a coordinated effort to curb oil production. Output cut newsflows sent oil prices to a one-year high of above USD50pb. As at 31 October 2016, oil prices eased slightly with the WTI for December 2016 closed at USD46.86pb, an increase of 6.9% year-to-date. Meanwhile, Brent for January 2017 settlement was last traded at USD48.61pb, rising by 8.1% year-to-date.

OPEC and Russia oil output cuts remain questionable despite recent developments. There is no guarantee that the deal will actually lead to a reduction in supply. However, if a reduction in output will actually happen, it will be negated by the increased output from shale producers in the US, since their production becomes profitable at oil prices above the USD50pb mark. Therefore, we expect oil price to range at USD43pb-USD45pb average for 2016, trending upward to USD48-USD50pb in 2017.

Brent Oil Price Projections 2016-2017, USD per barrel

Brent Price	1Q16 average	2Q16 average	3Q16 average	2016f average	2017f average
Actual	39.33	48.01	47.86	**-**	**-**
SK	-	-	-	**43-45^**	**48-50^**
IMF	-	-	-	42.96	50.64
World Bank	-	-	-	43	-
Fitch	-	-	-	42	45

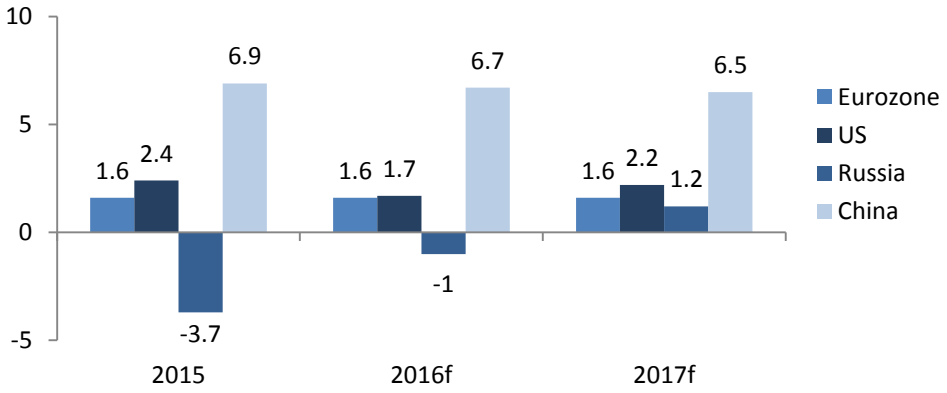
Source: Bloomberg, Multilateral Organizations, Fitch Ratings, Samruk Kazyna

^ represents in-house projection by Samruk Kazyna based on data available as at 31 October 2016

Regional economies

Global economic growth is expected to be modest in the medium-term, with global GDP growth projected at 3.2% in 2016 and 3.5% in 2017, according to World Bank's economic outlook released in July 2016. Meanwhile, the International Monetary Fund revised downward its expectations for global growth by 0.1% each year to 3.1% in 2016 and 3.4% in 2017. Global growth will be driven by major developed economies and emerging markets of China, India and ASEAN-5 and despite this, weaknesses remain within this group. Uncertainty associated with the strength of global economic recovery has raised volatility of the global financial markets and undermined confidence.

GDP Growth Forecasts of Selected Countries, % (2015-2017f)



Source: International Monetary Fund, World Bank, market consensus

Similarly, growth prospects have remained uneven among Kazakhstan's major trading partners, which could negatively impact the country's exports. Being Kazakhstan's largest oil export market, economic recovery in Europe is progressing at a lackluster pace despite aggressive and unconventional monetary policy measures, low oil prices and expansionary fiscal policies. Weak global trade and manufacturing activity, renewed domestic uncertainties and broader geopolitical risks continue to weigh on confidence and economic activities. In March 2016, the European Central Bank cut the deposit rate further below zero while long-term refinancing operations for banks were offered at below-zero interest rates. EU's GDP growth is expected to remain moderate at 1.6% over 2016-2017.

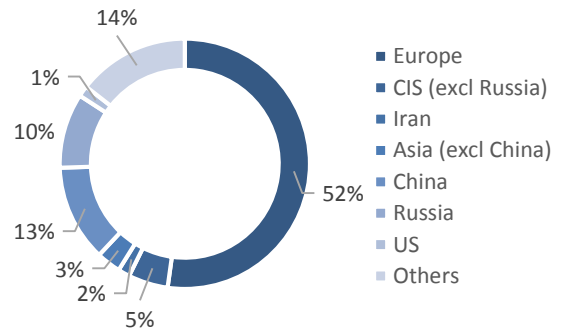
China, being Kazakhstan's largest export market for oil and metal products, witnessed economic growth of 6.7% in 2Q16, unchanged from 1Q16, as the still buoyant property market and government spending on infrastructure cushioned the slowdown in the manufacturing sector. Second quarter growth was slightly above market estimates of 6.6%, and was in line with the government's official

target of at least 6.5% for full year 2016. This suggests that the economy is responding to stepped up monetary and fiscal policy support, and reduces the pressure on policymakers of having to increase fiscal and monetary stimulus in 2H16. Market expectations are that China's GDP growth is likely to moderate further to between 6.2% and 6.5% over the medium-term as the economy rebalances and reforms are being implemented and calibrated by policy easing.

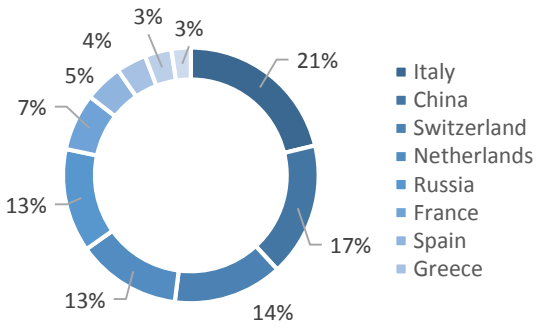
Russia's GDP growth contracted at a slower pace of 0.6% in 2Q16 vs. -1.2% in 1Q16, with industrial production, transport and agriculture being the factors supporting growth during the quarter. Construction and retail sales continued to have a negative impact on growth. Meanwhile, the ruble appreciated by 4.8% against the USD in 2Q16 after rising by close to 10% in 1Q16, and is currently trading at levels seen in mid-2015. A stronger ruble has contributed to easing inflation from 12.9% as at end-2015 to 7.9% average in 1H16. The central bank cut the interest rate for the first time in a year by 50bps to 10.5% in June 2016. Despite these, economic recession is expected to continue with GDP of -1.0% in 2016, recovering gradually to 1.1-1.2% in 2017. President Putin however warned that the Russian economy may stagnate near zero next year if no new growth drivers are found. Russia is a major destination for Kazakhstan's metal exports.

As such, future performance of China and Russia will have spillover effects to Kazakhstan through trade and weaker commodity prices, as well as through diminishing confidence and increasing volatility in financial markets. China and Russia account for 12% and 9% respectively of the country's total exports, and more-than-expected slowdown in China's economy and prolonged economic recession in Russia will put downward pressure on Kazakhstan's GDP growth. In addition, devaluation of the currencies of key trade partners especially the ruble will weigh on the competitiveness of the Kazakh exports and may result in downward pressure on the USD-KZT exchange rate with the risk of increased dollarization.

Exports by Region (1H16)



Exports by Country (1H16)



Source: Statistics Committee, Samruk Kazyna

2016-2017 outlook

In summary, Kazakhstan's GDP growth increased by 0.1% in 1H16 as compared to a revised -0.2% in 1Q16. Despite registering a marginal growth rate in 1H16, the economy has rebounded gradually from a contraction of 0.5% in January 2016 to achieve a small positive recovery as at June 2016. Declines in private sector consumption and investment have been cushioned by the government's fiscal stimulus packages (transfers from the National Fund to the budget amounted to 6% of GDP in 2015 and 8% of GDP in 2016). Latest statistic release showed that growth has strengthened further to 0.4% in the first nine months of 2016.

At this juncture, the official forecast for 2016 GDP growth remains at 0.5%, premised on lower oil price projection of USD35pb. Continued decline in export revenues (by approximately 24% on the year) will contribute to current account deficit of 4.5% of GDP in 2016. **Our expectation is that GDP growth will remain in positive territory in 2016, though growth rate is likely to be marginal, at 0.8%-1.0%, with in-house oil price expectation of USD43pb-USD45pb average this year.** The Ministry of Economy highlighted that upside potential of 1.0% to GDP is possible provided that the funds allocated under the Nurly Zhol program and anti-crisis funds are disbursed fully for the remaining of this year. **For 2017, GDP growth is expected to strengthen up to 2.0%, underpinned by low base effect, expectations of higher oil prices (USD48pb-USD50pb average) and increase oil output.**

In line with our earlier expectations of monetary policy for stimulus, NBK cut its base rate four times by a total of 500bps, from 17% in February 2016 to 12% in November 2016. Inflation currently corresponds to the regulator's expectations and the USD-KZT exchange rate has stabilized since March 2016, reflecting the combination of an improved external and domestic environment in the past few months. Further easing of the monetary policy moving forward would depend on the presence of sustained signal indicating the convergence of inflation to the target range. The next decision on the base rate will be on 9 January 2017.

Overall, we welcome the NBK's move in cutting the base rate which would bode well for domestic demand, business investments and the general economic activities. However on the general price level, **inflation is expected to average at more realistic level of 13%-14% in 2016. Inflation has stayed elevated at 15.9% average in 10M16**, with expectations of price levels to start easing in 4Q16. Take note that official projection for inflation is based on a one-point expectation i.e. the level anticipated as at December 2016, and this does not reflect the elevated levels of CPI in the first ten months of 2016. **For 2017, inflation is projected at 6.0%-8.0%, as the high base impact diminishes.**

On currency, we caution that volatility in global oil prices may cause the tenge to fluctuate in both directions. However, any movement of the tenge would not be sharp as the regulator plans to participate in FX market to smooth out significant fluctuations. In August 2016, NBK sold almost USD146mln on the exchange market. The USD-KZT exchange rate is expected to average at 342 in 2016, ranging at 340-345 in 2017, supported by expectations of economic recovery and higher oil prices.

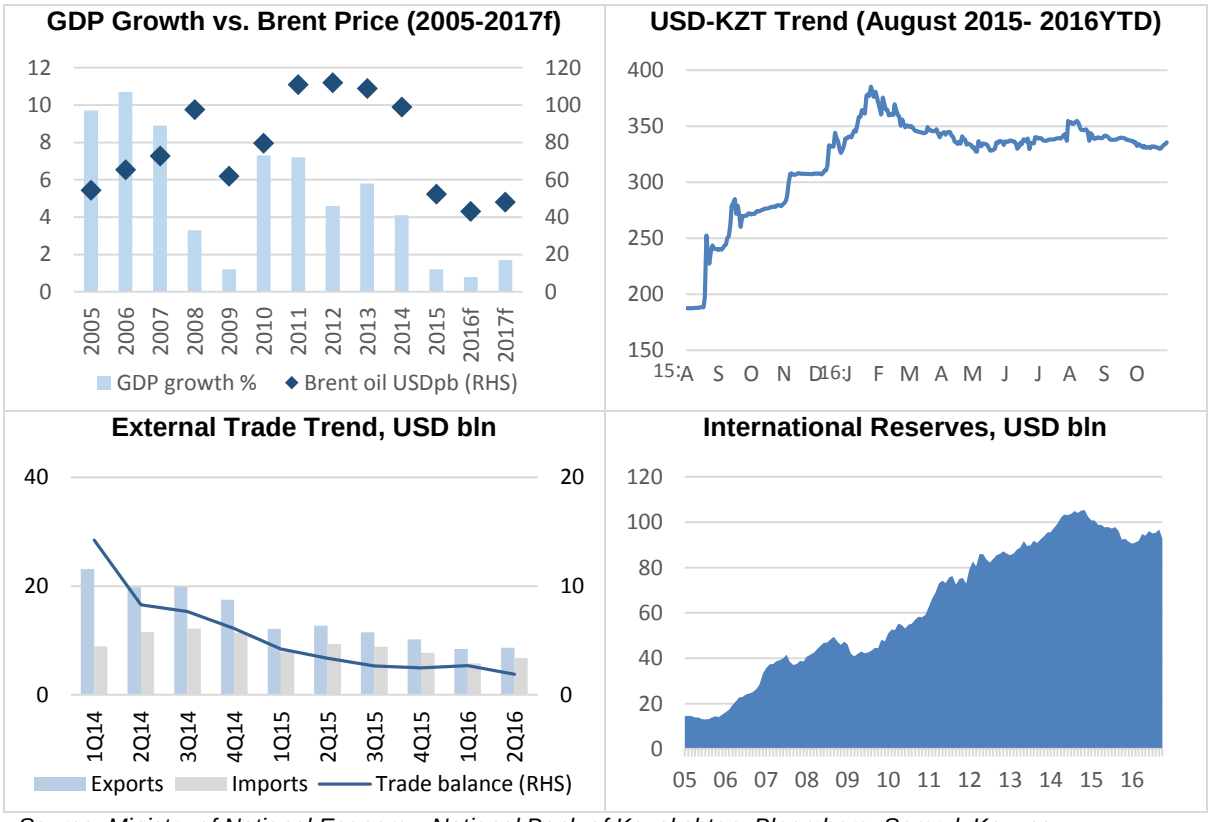
On regional economies, growth prospects have remained uneven among Kazakhstan's major trading partners, which could negatively impact the country's exports. Russia's GDP growth contracted at a slower pace of 0.6% in 2Q16 vs. -1.2% in 1Q16, with industrial production, transport and agriculture

being the factors supporting growth during the quarter. Despite these, economic recession is expected to continue with GDP of -1.0% in 2016, recovering gradually to 1.1-1.2% in 2017. China, being Kazakhstan's largest export market for oil and metal products, witnessed economic growth of 6.7% in 2Q16, unchanged from 1Q16. Second quarter results suggest that the economy is responding to stepped up monetary and fiscal policy support, and reduces the pressure on policymakers of having to increase fiscal and monetary stimulus in 2H16. Market expectations are that China's GDP growth is likely to moderate further to between 6.2% and 6.5% over the medium-term as the economy rebalances and reforms are being implemented and calibrated by policy easing.

Future performance of China and Russia will have spillover effects to Kazakhstan through trade and weaker commodity prices, as well as through diminishing confidence and increasing volatility in financial markets. China and Russia account for 12% and 9% respectively of the country's total exports, and more-than-expected slowdown in China's economy and prolonged economic recession in Russia will put downward pressure on Kazakhstan's GDP growth. In addition, devaluation of the currencies of key trade partners especially the ruble will weigh on the competitiveness of the Kazakh exports and may result in downward pressure on the USD-KZT exchange rate with the risk of increased dollarization.

Kazakhstan's economy is highly reliant on natural resources and extractive industries, and the constant change in global economic and sector dynamics has made it more challenging for the country to stay competitive. It is time for Kazakhstan to explore new opportunities and venture into new growth areas, as part of diversification efforts and to enhance sector value add to GDP contribution.

Kazakhstan: Charting Growth



Source: Ministry of National Economy, National Bank of Kazakshtan, Bloomberg, Samruk Kazyna,

Section 3.0 New Investment Horizon in Digitalization

3.1 Digitization - the way forward

Digitization is rapidly penetrating daily lives of people around the world, presenting new opportunities for businesses to develop new products and services and to modernize the way they operate, changing production processes, distribution channels and interactions with suppliers and customers. In this section we will review several such opportunities in the manufacturing, agriculture, rail transportation and retail sectors of Kazakhstan.

Infrastructure development, lower cost of processing, storing and transmitting data are taking the mankind to the threshold of a new and most powerful stage of the digital revolution - we are talking about an offline-online convergence and the emergence of a cyber-physical world.

This has become possible due to several fundamental factors – universal connectivity, rapid proliferation of sensor devices and data. Connectivity and data exchange make it possible to use resources more efficiently, to share the use of the infrastructure and to optimize capacity utilization: it is the so-called 'sharing economy' the scope of which today is estimated at USD150bln.

All these phenomena fundamentally change the structure of the global economic system – consumer opportunity, industry structure, the role of the state.

Digitalization drives values at all levels – from consumers to countries

Values for nations		
A new driver for GDP growth		
Positive net impact on job creation		
More efficient use of existing resources		
Values for government	**Values for companies**	**Values for citizens**
Increasing productivity in government operations such as tax collection and data management	Access to bigger market – increasing sales	Increased competition – consumers can find the best products at the lowest price-point
Potential to identify and reduce fraud and misuse of public services	Increased productivity potential through digitalization of business processes and business models	Access to new types of products and services (e.g. sharing economy)
Identifying and analyzing societal trends with big data tools	Better access to talent thanks to better reach of digital channels	Better employment possibilities through facilitated access to available job positions
More efficient communication with citizens and businesses	Increased transparency and ease of interacting with government	Facilitated access to government services through e-government services

Source: BCG Analysis

Impact on the consumer

Technology is increasingly becoming part of our daily lives; it is drastically changing the way we communicate, work, what we spend our money and time on. Today we are already living a 31-hour day[1] by doing more and more things at a time. Our attention is becoming increasingly fragmented and we give preference to companies and products that are better suited to our needs, which meet them within a minimal time-frame and provide the best value for money.

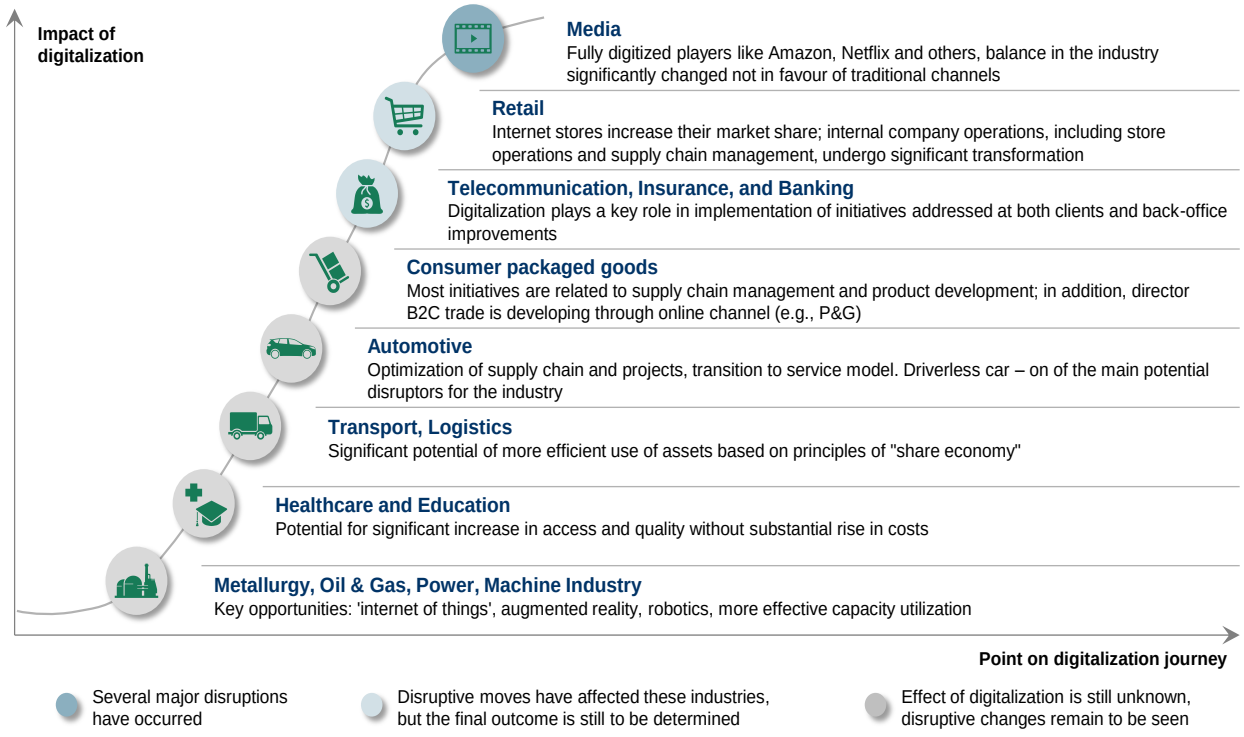
However, new possibilities also pose new challenges for all of us; they are not limited to technology but are also cultural, educational, moral and ethical challenges. Mosaic thinking, the boundaries of privacy, the bifurcation of our virtual and real projections, competing with artificial intelligence – all these pose questions that the humankind is yet to answer.

Impact on Business

The degree of the impact of digital technologies in various industries varies. However, there is no doubt that all industries and their players will sooner or later have to go through a digital transformation.

Such changes are already affecting the B2C sector (the media, retail, banking and insurance services). Here they are triggered by an extremely tough competition over two highly limited resources – the consumer's time and wallet. The success of aggregator platforms such as Uber and AirBnB is based on the principles of 'sharing economy' doing away with intermediaries and maximizing asset utilization, reducing the time between the moment a need arises and its fulfillment, and providing ample feedback opportunities.

Degree of impact of digitalization in various sectors is not homogenous



Source: BCG Analysis

[1] Tech and Media Outlook 2016, Activate, October 2015.

A fundamentally new feature for the business in the context of the current digital revolution is its impact upon the B2B sector. It is in B2B that digitalization capabilities are not limited to owning the consumer's limited resources, but offer infinite opportunities to approach new heights of efficiency and productivity.

We are talking about a phenomenon called 'Industry 4.0' that is characterized by a number of major trends that are already having a huge impact on the established business models today. The development of 3D-printing will significantly change the production and logistics processes in most industries – from mass consumer products to organ transplantation. Big Data and advanced analysis enable better and faster decision-making from predictive maintenance to fighting fraud.

However, the most difficult change for conventional industries will be, in our view, not so much the creation and integration of technologies, but rather a fundamental restructuring of corporate culture and organization. An iterative adaptive approach and a higher risk tolerance that are inherent to entrepreneurial mentality are in many ways alien to the existing approaches to managing big business. It is difficult to accept that the structure of any industry and company today must be seen as the main variable rather than a constant.

Another risk factor is weak integration of 'new' solutions and products with the existing IT systems. On the one hand, to stay competitive, major companies should at least be quick to embrace innovation. On the other hand, they are facing one of the greatest challenges of harmonizing the already existing IT platforms with any new solutions. In other words, the most difficult component of the term 'digital transformation' for a conventional business is 'transformation' – a consistent and conscious restructuring. Those who fail to embrace it will be left far behind.

3.2 Kazakhstan in the digital world: current state

The Kazakhstan's economy is heavily dependent upon commodity markets, which have entered a structurally new reality. The new environment makes it more difficult for the country to remain competitive.

Digitalization has the potential for value creation in Kazakhstan's 'main business' – the commodity sector, but also for diversification and unlocking potential of other sectors, stimulating entrepreneurial activity, 'amplifying' the structure of the economy due to the diversity of opportunities.

In 2016, Kazakhstan's GDP is expected to show modest growth from 0.5%-1.0%[2], and in 2017, growth is projected to be higher at 1.7-2.0%[3]. We are confident that embracing digitalization may change the forecasts for the next 3-5 years to being more optimistic.

To assess the level of digitization BCG is using e-Intensity Index, which measures how strongly a country has embraced the Internet through a broad based measure of the internet's depth & reach relative to other countries. The index is based on 28 indicators grouped into 3 sub-indices:

- Enablement: How expansive is the infrastructure and how available is access?
- Expenditure: What % of retail spend and advertising spend is online?

[2] Kazakhstan's Ministry of Finance (July 2016).
[3] Same as above.

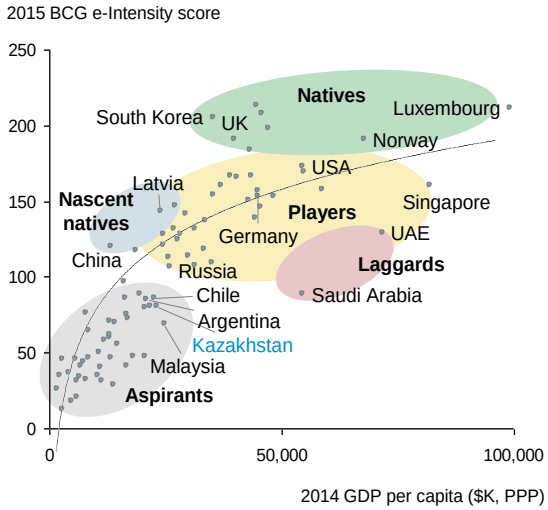
- Engagement: To what extent are businesses, governments and consumers embracing the Internet?

Kazakhstan remains in the group of Aspirants, a group of countries with still developing digital maturity, as measured by e-Intensity index, along with Argentina, Chile, and Malaysia. These countries along with UAE are comparable to Kazakhstan based on resource richness and welfare and therefore will be shown further in comparison to Kazakhstan as well as Russia and China – the closest economies possible to influence Kazakhstan economic performance.

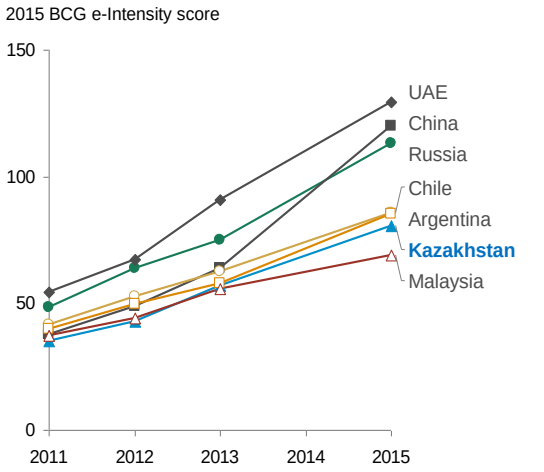
Despite overall improvements Kazakhstan's position, relative to other countries in the ranking, remains unchanged, stagnating at the 50th-52nd position.

Kazakhstan remains in the group of countries with still developing digital maturity

Along with Malaysia and Chile, Kazakhstan remains in the group of Aspirants



With relatively slow improvement, Kazakhstan's ranking remains almost unchanged

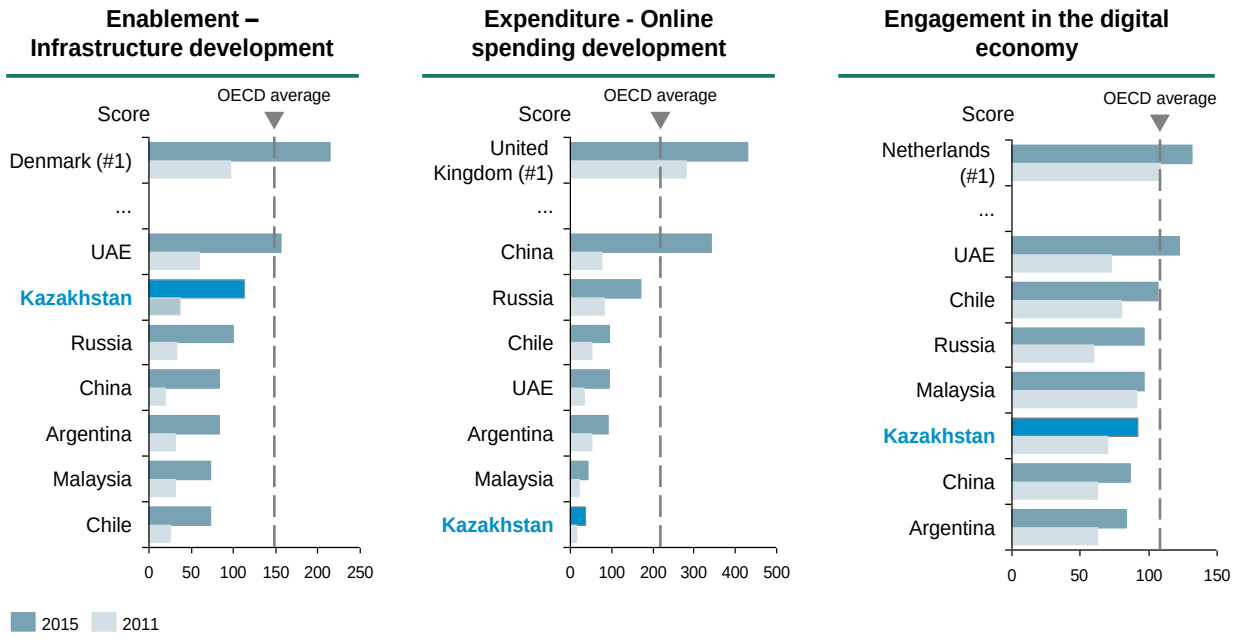


Note: Index is scaled so that the geometric mean is 100 for 34 OECD countries in 2011.

Source: BCG Analysis

Kazakhstan has achieved the highest success in developing the basic component of the digital economy – the Internet infrastructure – and in increasing the engagement of the population, business and the state in the digital economy. On online spending development Kazakhstan is still lagging behind the peer countries.

Kazakhstan demonstrates good performance in infratructure development and involvement in digital economy, lags in online spending

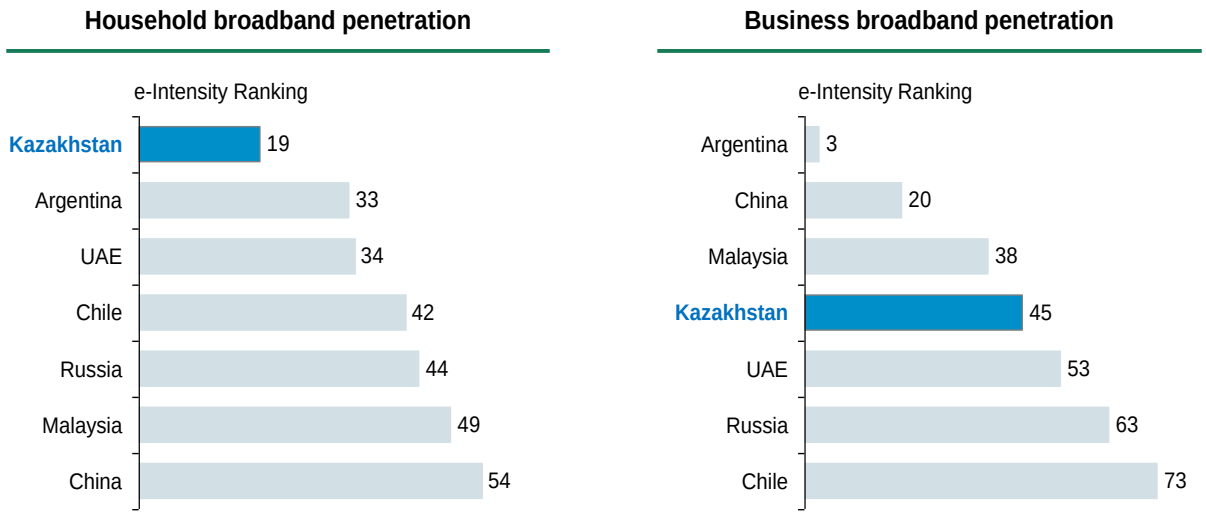


Source: BCG e-Intensity model (2015)

Enablement

During 2011–2015 Kazakhstan improved its ranking on the level of infrastructure development from the 44th to 36th position. Kazakhstan is the top-performer among the comparable countries for household broadband penetration with 40.7% of households having access to fixed broadband and 58.9% having access to mobile broadband[4]. There is still room to increase broadband penetration in business, where currently 40.9% of companies have access to broadband Internet[5].

Kazakhstan is performing well in broadband penetration



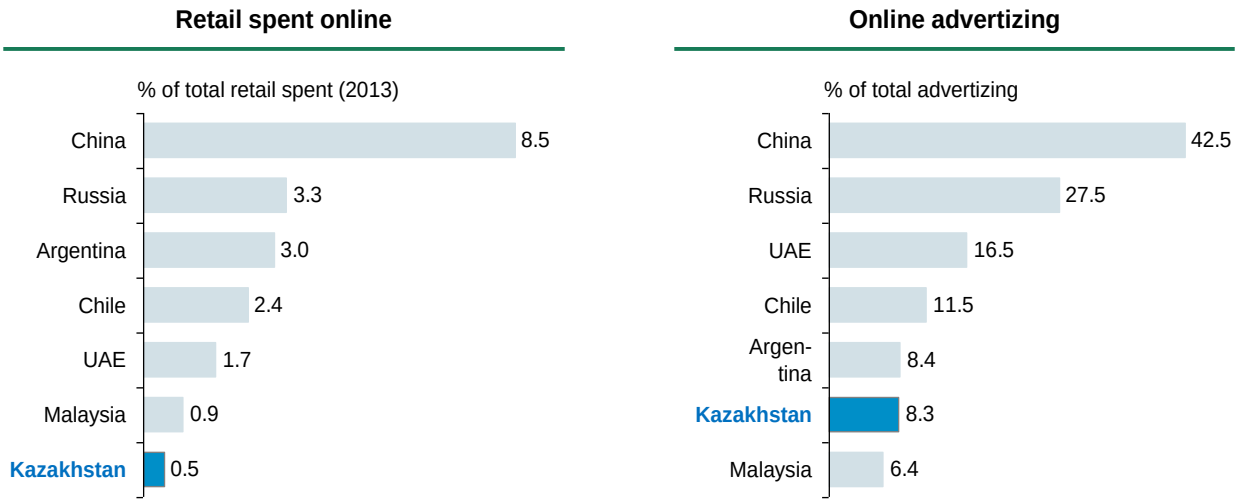
Source: BCG Analysis

[4] Statistics Committee of the Kazakhstan's Ministry of National Economy. On the use of ICT by households in Kazakhstan over 2015: Table 9. Distribution of households by type of connection to access the Internet (Bulletin), 2016.
[5] Statistics Committee of the Kazakhstan's Ministry of National Economy. On the use of ICT by companies in Kazakhstan over 2015: Table 15. The Internet use by companies (excluding public sector organizations) (Bulletin), 2016.

Expenditure

On online spending Kazakhstan ranks only 70, mainly due to the weak development of e-commerce and online advertizing in the country.

Kazakhstan has a huge potential for development in online spending



Source: BCG Analysis

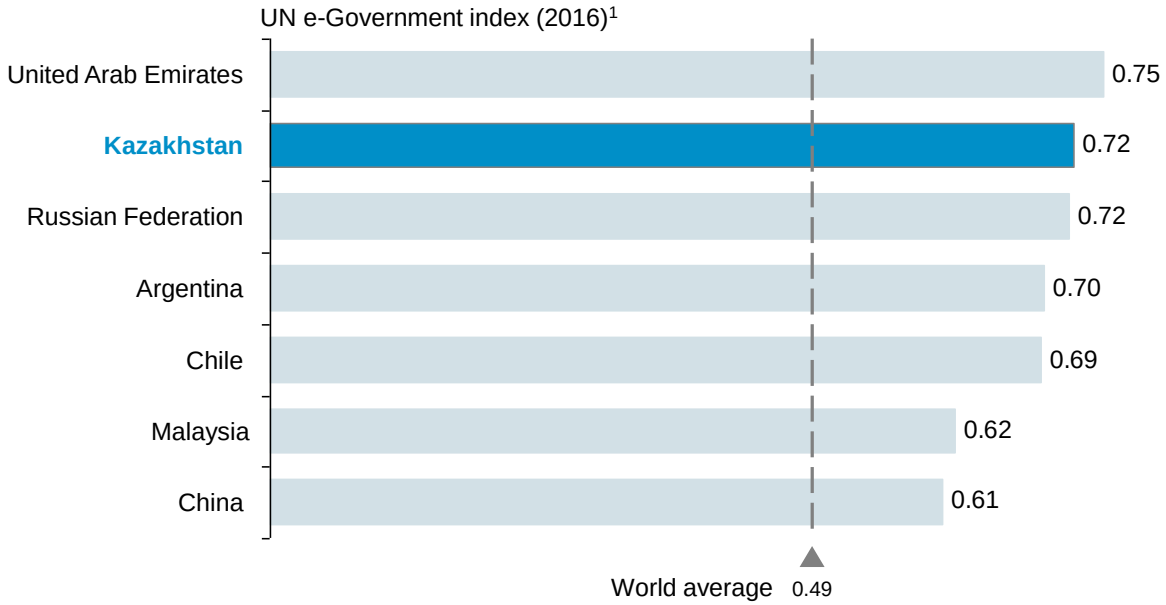
The share of e-commerce in Kazakhstan remains very low at 0.5% of the total volume of retail trade, compared to 8.5% in China and 3.3% in Russia. The annual growth rate is quite slow as well at 9% versus 61% in China and 28% in Russia.

Online advertizing comprised only 8% of the total advertizing spend in 2014, which is significantly lower than in Russia (28%) and China (43%). The main reason for low share of online advertizing may be in relatively low qualification levels among marketing specialists and software developers, who do not appreciate the full potential of Internet technologies in advertizing and targeted sales. From a technical point of view, existence of the national firewall could be another limiting factor in consumer targeting.

Engagement

Despite a slower growth rate, engagement of the population in the digital economy in Kazakhstan is on par with the comparable countries. Two factors have contributed to this. First of all, the developed Internet infrastructure allowed more than half of population (54%) to become Internet users. Secondly, the online platform of public services egov.kz significantly increased engagement of the state, business and citizens in online. During a relatively short time Kazakhstan managed to integrated databases of various public authorities, which allowed implementing a full-fledged "one window" system.

Kazakhstan is on par with comparable countries with regard to the level of involvement in the digital economy



1. UN e-Government index assesses the progress governments are making to support the electronic delivery of public services

Source: United Nations, BCG Analysis

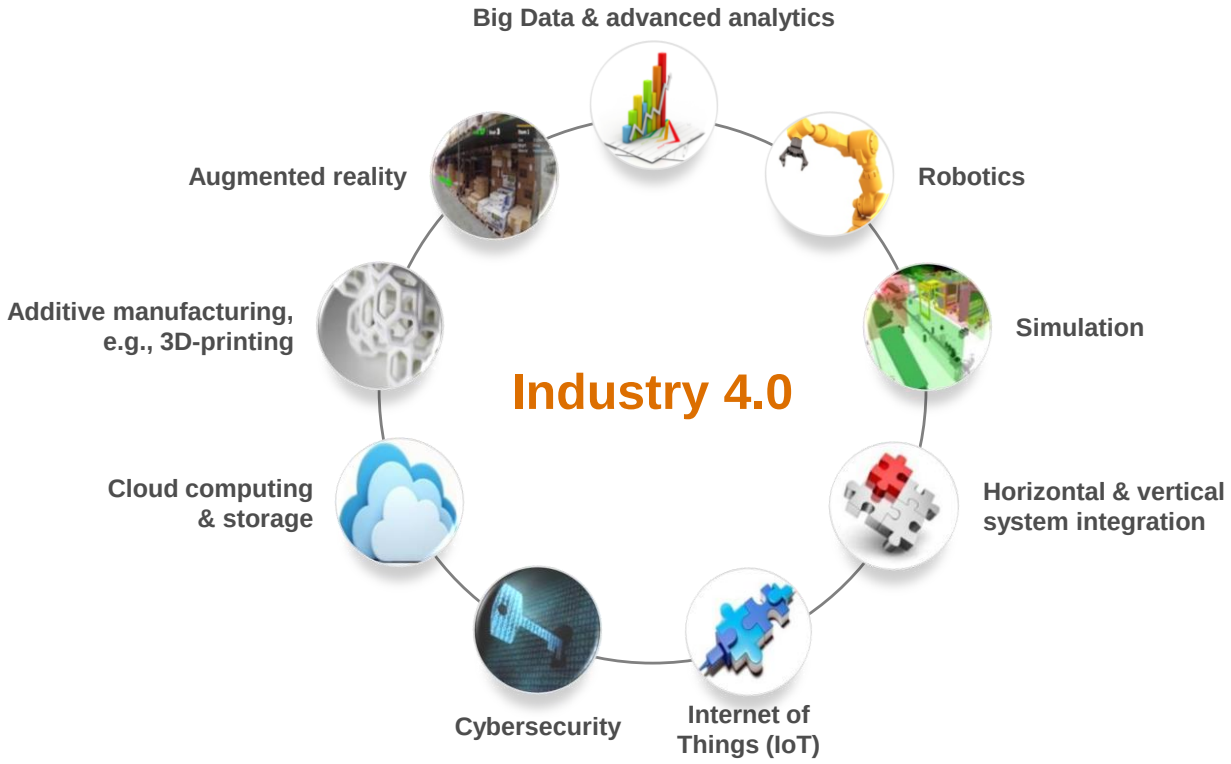
Going forward Kazakhstan will need to improve engagement by increasing Internet penetration in smaller towns and villages. Transition to full-cycle online processes, i.e. from traditional «live» to electronic signatures, from paper to fully electronic document flow and electronic IDs, will allow increasing engagement even further. We also see large potential in the digital development of Kazakhstan through provision of additional electronic services, like telemedicine and online education.

3.3 Digital opportunities for the national economy: examples of selected industries

Manufacturing

Digitalization of manufacturing covers both "Industry 3.0" and "Industry 4.0" solutions. "Industry 3.0" started their development in the 1970s and include classical industry automation solutions, such as PLCs, SCADA and DCS systems. "Industry 4.0" are using such emerging technologies, such as Big Data, Internet of Things and augmented reality to take digitalization of manufacturing to the next level.

Nine technologies are transforming industrial production



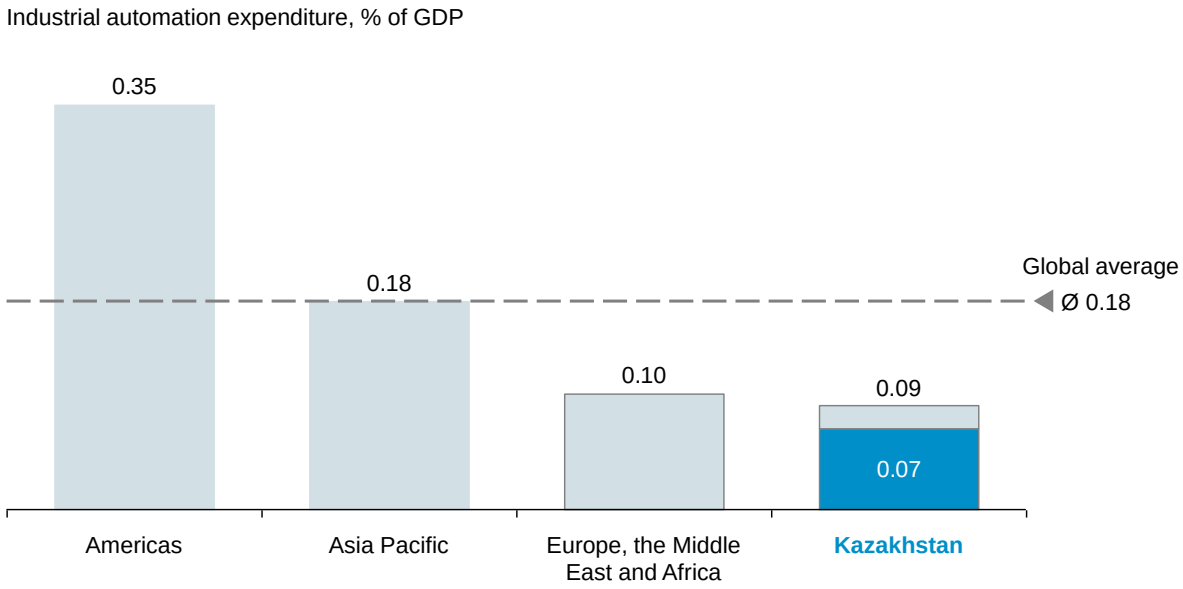
Source: BCG Analysis

Manufacturing contributes almost 25% into Kazakhstan GDP[6]. However local industry experts emphasize that the level of automation in the industry remains low. While automation level is difficult to measure directly, this view is supported by several data points. Around 20% of manufacturing companies are not equipped with computers and 24% do not have access to Internet[7]. Over 40% of production assets are outdated[8].

The chart below compares industrial automation expenditures as a share of GDP in Kazakhstan with other countries. Such expenditures include purchasing and implementation of industrial automation systems (SCADA, MES, DCS, PLS), and related field level hardware (sensors, drives etc). In Kazakhstan overall spending for industry automation comprised only 0.07-0.09% of GDP, which is 2.3-3 times below global average and 4-5 times lower than in the Americas. Industrial automation spend today is mainly driven by greenfield projects, with very limited investment into automation of existing sites.

[6] Statistics Committee of the Kazakhstan's Ministry of National Economy (2016).
[7] Same as above.
[8] Same as above

Industry automation expenditures in Kazakhstan are relatively low in comparison with other regions



Source: BCG Analysis, EIU Country Data

Given the current state and based on global trends, we see two potential 'digital' opportunities in Kazakhstan manufacturing.

The first opportunity is linked to **industrial automation of existing production sites** (brownfield projects) in sectors like oil and gas, mining, and energy. We also believe that creating an advisory / service provider in this sphere – an industrial automation solutions integrator engaged in system design, implementation and maintenance – represents an attractive investment opportunity by itself.

Speaking about "Industry 4.0" solutions, we see potential in **3D printing**, or additive manufacturing, which refers to various processes of synthesizing a three-dimensional object from polymers, metals, alloys, sand and glass. Introduction of 3D printing can help enterprises optimize their non-core activities (e.g. metalworking and galvanic shops) and reduce warehouse expenditures. Availability of 3D printing services will also make easier and cheaper product prototyping for innovative companies, creating positive impact on SME development.

Agriculture

For more and more countries "agriculture is becoming increasingly knowledge-intensive and high-tech"[9]. Advanced technological tools, such as digital soil maps, global positioning system (GPS), remote sensing and Big Data for precision farming, are emerging for agricultural producers worldwide. Precision farming, for example, integrates hardware and software to optimize crop yields and lower per-acre expenses. A wide range of equipment utilized – UAVs, field/on-the-go/remote sensors and robots – collect real-time data on terrain features and topography, organic matter content, moisture levels, nitrogen levels, pH and micro-climate.

Kazakhstan, however, still faces a wide range of more fundamental issues that need to be addressed in parallel or prior to introducing new digital technologies. Low or improper usage of fertilizers and

[9] World Bank Group. World Development Report 2016: Digital Dividends, 2016.

pesticides, low usage of animal feed, outdated equipment are key drivers standing behind low productivity in agriculture. Others concern poor infrastructure and logistics, low quality of professional resources, poor processes organization and inadequate information infrastructure.

Agricultural producers in Kazakhstan lack basic tools that are needed to introduce digital technologies. In 2015 only less than 33% of agricultural companies reported on having computers and only 27% have access to Internet. Average ICT spending among agricultural companies amounted to 90,000 Tenge in 2015, and total ICT expenses in agriculture was only 0.1% of overall ICT spending across industries.

Despite the issues we see several opportunities for digitalization in agriculture in Kazakhstan. We believe that gradual transformation starting from overcoming basic constraints and then shifting to advanced agricultural technologies seems to be more natural and efficient for Kazakhstan. Basic technological improvements could include real-time weather monitoring and forecasting that could assist in enhancing operational processes. More advanced opportunities, suitable for Kazakhstan today, include **agro information and advisory services** and precision farming.

Development of **agro information and advisory services** to the farmers may significantly improve productivity of the least advanced producers. This could include subscription-based access to information and analytical data (e.g. knowledge databases, industry and specialized reports, specialized weather forecast), basic and customized recommendations (e.g. on the use of fertilizers and pesticides) and personalized professional development materials (e.g. training, support, etc.). For example, In Africa Esoko provides services to 350,000 farmers from 10 countries through a mix of web and mobile apps. The services range from simple SMS alerts on market information and weather forecasts to data collection and surveys to training and customized advisory support[10]. For more sophisticated users Geosys, which operates on four continents, offers integrated monitoring, mapping and modeling solutions as well as data sources using satellite technologies[11].

At the same time, certain most advanced and largest producers may be ready to adopt **precision farming** solutions, which through more accurate data allows to improve crop yields while decreases the costs related to, for example, fertilizers and chemical application. However, precision farming requires significant capital investments and an advanced level of technological readiness of the producer, we think that this opportunity may be limited only to large agricultural holdings in Kazakhstan.

Introduction of digital technologies in agriculture along with solving some fundamental issues could positively affect the overall agricultural performance by increasing the sector efficiency and effectiveness.

[10] Esoko.com
[11] www.geosys.com

Transportation

Digitization is reaching transportation sector in Kazakhstan.

Kazakhstan Temir Zholy, the national railway operator, started introducing digital technologies in customer services and traffic management. Online ticketing service allows passengers to purchase domestic and international railways tickets from various online platforms. Starting from the next year freight forwarders will have an opportunity to place and track their orders online through an electronic document and contracting system using a computer or a smartphone. All locomotives are equipped with sensors, which enables real-time identification of their location using satellite and fiber optic communication lines.

Despite the progress made, there are still a number of issues affecting both B2B and B2C segments in rail transportation, such as:

- Limited functionality of the digital channels for communication between carriers and passengers;
- Limited demand forecasting capabilities for cargo and passenger transportation;
- Low efficiency and high cost of repairs, absence of preventive maintenance.

Building on availability of the client data and real-time order information, Kazakhstan Temir Zholy should be able to introduce demand forecasting and integrated planning capabilities for freight and passenger transportation, allowing optimization of the network and rolling stock usage. Introduction of predictive maintenance analytics solutions to complement traditional asset performance measurement and inspection tools could improve maintenance planning processes, resulting in higher availability and service level of railway assets and reduced service delays and outages.

Freight motor transportation is equipped with modern digital technologies enabling effective operation of the carriers. Microsoft Dynamics и 1C-based solutions allow monitoring technical condition of vehicles, tracking vehicle movements and fuel consumption, etc.

The next step of the digital evolution in the transportation sector lies in customer experience with such improvements as:

- Making multimodal transportation more convenient, including the possibility of planning the itinerary and purchasing 'door-to-door' travel tickets;
- Ensuring access to means of communication en route;
- Creating simpler ticket and shipping booking systems using mobile applications.

Given the current state of digital innovation in the transportation sectors in Kazakhstan we see opportunities that could address the existing gaps. As 89% of revenues of rail and freight motor transport operators are derived from freight[12] we limit such opportunities to freight operations only.

Automation of **demand forecasting and planning processes** can improve operational processes and increase productivity of railway operators. This opportunity is based on modeling systems and Big Data integration and analysis that would allow to forecast the demand for passenger and freight transportation more accurately and to better understand customer needs and other objectives. Big

[12] Statistics Committee of the Kazakhstan's Ministry of National Economy. Key indicators of the transportation sector performance in Kazakhstan in January-December 2015, 2016.

Data is already widely used for these purposes by such foreign players as DB, SBB, SNCF etc. It will require, however, reengineering of related business processes, hardware upgrades and personnel skills upgrade.

Predictive maintenance analytical solutions include advanced tools in sensors and communication technologies, data integration, analytical and monitoring systems. Investment in predictive maintenance can delivers cost efficiency and more effective asset utilization for rail operators.

Freight exchange platform will connect freight carriers with shippers and forwarders, better serving the needs of smaller players. It can include a tendering platform to make pricing more effective. All participants also could benefit from direct connection between counterparties and higher level of transportation services. Today, despite a more economical cost of long-distance rail transportation (over 1,000 – 1,500 km) as compared to road transportation, SMEs select the latter due to a complicated process of booking and purchasing railway freight transportation. Globally, digital B2B platforms are divided into broker platforms (Cargoclix.com, DBSchenker, Cargomatic), forwarding companies' platforms (UPS, MyDHL) and information platforms (Xeneta, Inttra). Most of them are multimodal and have a global reach, which makes the process of purchasing logistics services much simpler and improves fleet utilization. The platform will have catalytic effect on SMEs and result in increase of the overall transparency and efficiency of the Kazakhstan logistic system.

Digitization of the transportation sector in Kazakhstan brings lots of opportunities and many challenges at the same time. It requires becoming more flexible, sensitive and open to changes, learning an adoptive operational style from transport companies, administration and smaller players.

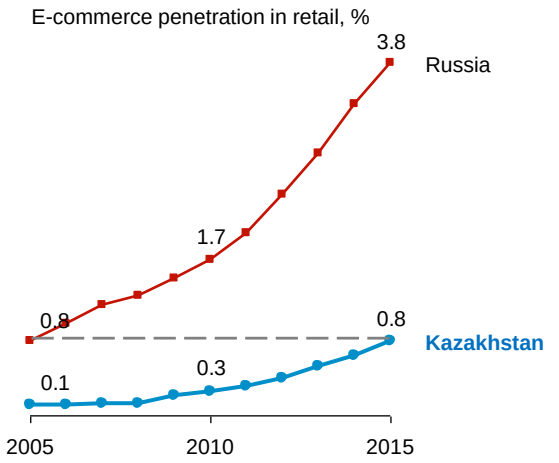
Retail trade

Despite economic slowdown in Kazakhstan in 2015, retail sector demonstrated stable growth at 5% p.a. on average during 2010-2015[13]. Online retail trade (e-commerce) showed even more dynamic results growing at 32% p.a. over the same 5-year period. However the e-commerce market remains very small, representing only 0.8% of the total retail trade in 2015. This corresponds to the size of the e-commerce market in Russia in 2005. Assuming that Kazakhstan's e-commerce market will repeat Russia's growth pattern, we estimate the market value to reach USD750-USD800mln in 2020.

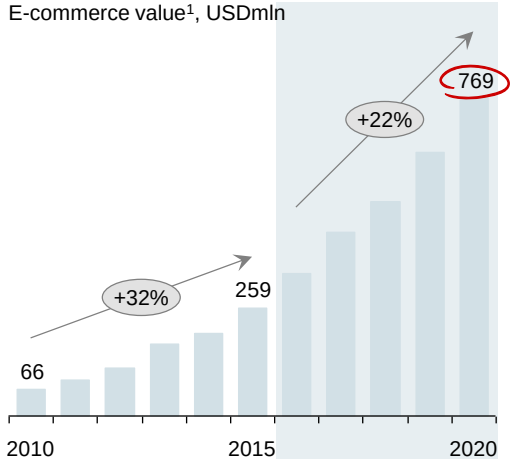
[13] Euromonitor International. Market size (excl. Sales tax) of Retailing and Internet Retailing markets (in US Dollars).

With below 1% of the total retail market, e-commerce in Kazakhstan has potential to grow to USD750-USD800mln a year in 2020

E-commerce market in Kazakhstan lags behind that in Russia by 10 years...



...and can reach USD750-USD800mln by 2020, if grows at the same rate as the Russian market



1. Forecast based on gross retail forecast by Euromonitor

Source: BCG Analysis, Euromonitor

To facilitate development of the e-commerce market Kazakhstan will need to address three factors that currently limit the growth.

First of all, in Kazakhstan there is no strong culture of shopping online as many internet-users are still getting familiar with wide range of opportunities internet provides. In 2015, 73% of consumers in Kazakhstan did not see the need to shop online. Around 26% of consumers preferred shopping in physical stores either because they wanted to see the product in person and/or being loyal to a store[14]. However, the culture is expected to evolve rather quickly, as "the younger generation, who already are strong internet users, will take part in more online shopping over the forecast period"[15].

The second factor is low quality of delivery and fulfillment services. In Kazakhstan KazPost is the biggest provider of delivery services. However due to inadequate service levels provided by the company online retailers have to use its delivery only in remote locations. In bigger cities like Almaty and Astana sellers use courier delivery services, but their quality is also not high. Even international operators, like Pony Express, DHL, etc are not able to ensure sufficient service level. Such situation pushes retailers to create competition between delivery service providers or develop own delivery that make online retail business model in Kazakhstan more complicated and drives costs up. On top of that, providers of high-quality fulfillment services are almost non-existent.

The third factor is the underdeveloped online payment, especially payment-upon-delivery, system. Online shoppers in Kazakhstan prefer to pay when they get their order however insufficient quantity of mobile POS terminals and banks' restrictions on the use of payment cards for online purchases do not allow provide service of sufficient quality. According to experts, 37% to 48% of card payments for online purchases made upon delivery are being rejected by the banks.

[14] Statistics Committee of the Kazakhstan's Ministry of National Economy. On the use of ICT by households in Kazakhstan over 2015: Table 24. Reasons for not making purchases/placing orders over the Internet (Bulletin), 2016.
[15] Euromonitor. Non-store retailing (Analysis), January 18, 2016.

Given that online retail trade remains underdeveloped, we see that the first step to unveiling its hidden potential is to ensure basic conditions are in place, such as sufficient quality of delivery services and effective online payment solutions. Then, **creation of a local E-commerce platform** in B2B and B2C segments, much like Amazon or Alibaba, will open many opportunities for development. First, it can provide affordable marketing and sales channel for local SMEs in and outside country. Second, it will provide access to imported goods and services that are not available now in Kazakhstan. Finally, such platform could benefit from strong connection with Kazakhstan postal and telecom operators, also providing them with an opportunity to expand their product and service portfolio.

Digitization provides opportunities for retailers in the physical space too. Experience of retail companies around the world demonstrates that digitization can add an extra value enhancing sales and efficiency. Thus digital shelves used by Adidas and Debenhams provide shoppers with full information on products and services. Augmented reality kiosks at Lego, Nissan and Tesco stores give an idea of what products look like. Social shopping welcomed by Topshop, self-scanning at UK Waitrose supermarkets, RFID technologies already simplified shopping experience for millions people.

3.4 Conclusion

We believe that further development of digital economy in Kazakhstan will bring additional economic benefits to the country. For example, development of e-commerce has potential to stimulate business activity by providing consumers with additional channels to SMEs. It also has potential to reduce "grey" economy since online transactions will be transparent and will reduce the level of "grey" cash transactions.

However, digital transformation will require a fundamental review of the approach of private businesses and the government to interaction, decision-making, promotion of innovation and creating a regulatory environment where each participant of the system plays a meaningful role.

Consumers who enjoy most of the benefits of the digital economy should be open to new possibilities and play an active role in development of digital services.

Businesses should focus on improving efficiency and productivity for which ample opportunities are emerging today. Digital agenda is becoming a "must" element for every strategy any business is putting forward these days. Those who are mindful of this will win in the future.

Digitalization also brings quick wins that are so necessary to demonstrate success in the short term. Even more importantly the topic should remain high on the agenda of strategic investors and managers who care about sustainable development of their businesses.

Multiple opportunities for companies in all industries, including those highlighted above, are apparent to be actively developed. And they will require a dialogue with the state, cross-industry cooperation and a joint development of major projects.

Appendix: Kazakhstan's Key Indicators

Kazakhstan: GDP Composition (2015-2017f)

Key indicator	2015	2016f	2017f
GDP			
GDP growth, % YoY	1.2	0.8-1.0	1.9-2.0
GDP per capita, USD	10,509.9	6,946.9	7,483.6
Agriculture, % YoY	3.5	3.6	2.9
Industry, % YoY	-1.5	-1.7	2.8
Mining & quarrying, % YoY	-2.5	-3.4	4.7
Manufacturing, % YoY	0.2	0.0	1.2
Construction, % YoY	4.4	9.5	2.0
Oil price, USDpb	52.40	43-45	48-50
Indicators of monetary policy			
Inflation, % YoY average	13.6	13.0-14.0	6.0-8.0
Official NBK's refinancing rate, % end of period	5.5	5.5	5.0-8.0
Credit to the economy, KZT bln end of period	12,674	13,000	13,429
Deposit of residents, KZT bln end of period	15,970	17,271	18,652
Money supply, KZT bln end of period	17,207	18,903	20,517
USD-KZT	221.7	342	340-345
Current account balance			
Export, USD mln	46,294.2	35,348.4	40,193.1
Import, USD mln	33,645.3	26,670.7	29,146.9
Trade balance, USD mln	12,649.0	8,677.8	11,046.2
Current account balance USD, mln	-5,823.2	-5,370.5	-4,546.1
% of GDP	-3.2	-4.5	-3.4
Consolidated budget			
Revenue	6,885.8	8,025.8	8,191.9
% of GDP	16.8	18.1	16.9
Oil revenue	2,277.6	1,852.6	1,799.5
Non-oil revenue	4,608.2	6,173.3	6,392.4
Expenditure	8,639.1	10,096.9	10,134.9
% of GDP	21.1	22,8	20,9
Consolidated budget	-1,753.3	-2,071.1	-1,943.0
% of GDP	-4.3	-4.7	-4.0
Non-oil balance	-4,030.8	-3,923.6	-3,743.5
% of GDP	-9.9	-8.8	-7.7

Source: Ministry of National Economy, National Bank of Kazakhstan, Samruk Kazyna

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