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Growth Diagnostics for a Resource-Rich Transition Economy:

The Case of Mongolia

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Abstract

This paper uses a growth diagnostics approach à la Hausmann, Rodrik, and Velasco (HRV) to identify the most 'binding' constraints to private sector growth in Mongolia – a small, low-income, mineral-rich, transition economy. The approach of applying the HRV methodology is useful in those cases where a lack of data prevents us from estimating shadow prices to identify the most 'binding' constraint to growth. We find that although Mongolia is not liquidity constrained and has grown rapidly in recent years, economic growth has been narrowly based. Investment has flowed mainly into a small number of firms operating in mining and construction. The low level of private investment in sectors outside mining and construction has been due to low returns – a result of costly and unreliable transportation services; lengthy and complex transit procedures, including customs and trade rules; distortionary taxes; coordination failures, at both domestic and international levels; and growing corruption. Poor financial intermediation is also a problem that has kept the cost of finance high, although lower than in previous years. Alleviating these binding constraints will ensure that Mongolia maintains the path towards sustained, broad-based growth.

Growth Diagnostics for a Resource-Rich Transition Economy: The Case of Mongolia

Elena Ianchovichina[*] and Sudarshan Gooptu[§,a]

1. INTRODUCTION

In the span of fifteen years since 1995, Mongolia's transition from a centrally planned to a market-based system has proceeded successfully, and the economy has grown rapidly in real terms at an average, annual rate of 6.3 percent. The transformation involved the implementation of fundamental economic reforms including price liberalization, privatization, opening the economy to foreign competition, and establishing market institutions. Macroeconomic policies have remained prudent, debt levels have become manageable,[1] and a freely floating exchange rate regime has been put in place. In addition, Mongolia's transition was largely unhindered by widespread social or political unrest, although the young democracy is still being perfected.

In the past ten years, Mongolia's macroeconomic performance has been strong. Foreign direct investment – especially in mining and construction activities, and Mongolian workers' remittances have increased significantly in recent years fuelling the observed high GDP growth. The average share of FDI in Mongolia's GDP of 5.2 percent for the 10-year period (1996-2005) was higher than the average for the East Asia region, and more than three times that for the low-income country group to which it belongs. The economy grew at a fast pace averaging 8.4 percent in the period 2004-06.

The structure of the economy has, however, evolved in a manner where the sources of real GDP growth have become concentrated, and heavily dependent on mining and livestock, and employment generation has been elusive, despite having a young and educated labor force. In 2005, the mining sector directly accounted for 18 percent of GDP, 66 percent of industrial output, almost 76 percent of export earnings and 20 percent of Government revenue. The mining sector output has the potential to increase substantially over the next decade. It is projected to double or even triple from 2003 levels by 2010 provided large projects get development approvals and are successfully commissioned. Mongolia has consequently become increasingly dependent on a narrow range of exports, and vulnerable to commodity price shocks.

Given these challenges, one may wonder whether Mongolia will be able to sustain its growth record in the coming years. *What will it take for Mongolia's real GDP growth to remain high in the next ten years? What are the key constraints to growth that must be addressed in the short to medium term to maintain economic growth?* These are some of the questions that motivated this study and to answer them the paper applies the growth diagnostics approach postulated by Rodrik (2004a) and outlined in Hausmann, Rodrik, and Velasco (2005). Our approach of applying the HRV methodology is useful in those cases where data limitations prevent us from estimating shadow prices. For the diagnostics, we rely on an eclectic array of macro- and micro-economic techniques including country-level and firm-level comparisons, times series analyses, sector studies and investment climate surveys.

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[1] The macroeconomic outlook however remains somewhat vulnerable to risks that need to be monitored and managed effectively.

Our approach sets the paper apart from others which typically rely on a single technique such as growth regressions, times series analysis or macroeconomic models to identify bottlenecks to economic growth at the macro level or microeconomic analyses at the firm level.[2] These mechanistic techniques are often applied to different countries, but as noted in Leipziger and Zagha (2006) and World Bank (2005), the fact that countries differ in history, institutions, resources, initial distortions and other initial conditions implies that customization in the diagnostic is key. Most papers also do not attempt to prioritize the areas in need of intervention. Given the difficulty of quantifying second-best effects of reform, this paper attempts to identify the most 'binding' constraints to aggregate economic growth, in order to ensure that policy interventions to relax these constraints have sizable positive, first-best effects that more than compensate any possible negative, second-best effects.

Finally, the paper differs from many of the recent policy analyses in resource-rich countries that are now facing windfall gains from soaring mineral prices in international markets. These studies have looked at issues related to overall macroeconomic management, efficiently managing these exhaustible mineral resources and the revenues they generate, so as to avoid "Dutch Disease" effects and hoping that the situation does not degenerate into a "resource curse"—something that, as history has shown, a majority of countries have faced with only a few exceptions (Chile and Finland, for instance).

The paper is organized as follows. Section 2 presents the analytic framework for growth diagnostic analysis, and discusses data and techniques appropriate for this type of analysis in the case of a low-income, transition economy. Section 3 applies the framework in the case of Mongolia. Section 4 presents concluding remarks and caveats.

2. METHODOLOGY

The growth diagnostic approach of Hausmann, Rodrik and Velasco (2005) is grounded on the standard economic theory. To illustrate this we start with the simplest Ramsey-type optimal growth model.[3] In theory, this model assumes that households have perfect foresight and need to decide how much labor and capital to rent to firms, and how much to save or consume by maximizing their individual utility:

$$U_s = \int_s^\infty u(c_t) \exp(-z(t-s)) dt \quad , \tag{1}$$

subject to a budget constraint:

$$c_t + \frac{dk_t}{dt} + nk_t = f(a_t, \theta_t, x_t, k_t),\text{[4]} \qquad (2)$$

where c is consumption per capita, n is population growth, k is capital per worker, a is technological progress, θ is index of externality, x is availability of complementary factors of productions, such as infrastructure or human capital, z is the rate of time preference.

Firms maximize profits at each point in time and use the production function $f(.)$ in (2) to produce a single good. In their production function, technology is exogenous, and so are the complementary factors of production and the index of externality. First-order conditions for profit maximization imply that:

$$f'(a_t, \theta_t, x_t, k_t) = r_t(1 - \tau_t), \qquad (3)$$

$$f(a_t, \theta_t, x_t, k_t) - k_t f'(a_t, \theta_t, x_t, k_t) = w_t. \qquad (4)$$

The government spending requirements are assumed to be fixed exogenously, the government imposes a tax on the rental price of capital, so the after-tax return to capital is $r(1-\tau)$. Maximization of (1), subject to (2), (3) and (4), and carried out by setting up a Hamiltonian results in the following condition:

$$\frac{\dot{k}_t}{k_t} = \frac{\dot{c}_t}{c_t} = \sigma(c_t)(r_t(a_t, \theta_t, x_t)(1 - \tau_t) - \rho), \qquad (5)$$

which holds in the case of balanced growth equilibrium. In this equation, σ is the inverse of the negative of the elasticity of marginal utility, and $\rho = z + n$ is the real interest rate.

Equation (5), also known as the "Euler equation" or "Keynes-Ramsey rule", is the starting point for our analysis of binding constraints to growth as it captures many of the most important factors affecting growth of an economy in the short run, as well as those that matter for sustained growth in the future. If ρ is high, for any return on investment, investment is low and the economy is considered liquidity constrained. If r is low, for any cost of capital, investment is low and the economy is considered inefficient.

The cost of finance ρ may be high because the country has limited access to external capital markets or because of problems in the domestic financial market. A country may have difficulties accessing external capital markets for a variety of reasons including high country risk, unattractive FDI conditions, vulnerabilities in the debt maturity structure, and excessive regulations of the capital account. Bad local finance may be due to low domestic saving and/or poor domestic financial intermediation.

Return to capital r may be low due to insufficient investment in complementary factors of production, such as infrastructure and human capital, low land productivity due to poor natural resource management, or low private returns to capital due to high taxes, poor property rights, corruption, labor-capital conflicts, macro instability, and market failures, such as coordination externalities and learning externalities affecting negatively the country's ability to adopt new technologies.

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[4] Although in principle we could allow households to borrow from each other in the aggregate, private debt must always be equal to zero, and wealth accumulation is equivalent to capital accumulation.

The data needed to empirically estimate (5) are not available in most low-income countries, in general, and in a transition economy like Mongolia[5] in particular. Therefore, an application of the Hausmann, Rodrik and Velasco (2005) framework requires one to analyze carefully each group of factors that affects the rate of return or the cost of capital and represents a branch of the "growth diagnostic tree" (Figure 1) in order to select the 'most' binding constraints to private sector investment and entrepreneurship in a country.

It is important to note that governments face other important welfare improving objectives, for instance, improving social safety nets and addressing other social concerns including environmental problems but these may not be necessarily or directly related to country's growth priorities in the short-term.[6] While this growth diagnostics methodology seems simple, in practice as cited in Leipziger and Zagha (2005) it is "a disciplined art" that requires in-depth knowledge of the Mongolian economy.

Recent economic growth literature suggests that when constraints are "binding", they result in activities that are designed to get around them.[7] Symptoms that one sees under these circumstances include: high taxes; high degree of informality in economic activities; poor legal institutions; high demand for informal mechanisms of conflict resolution and enforcement; poor financial intermediation; and internationalization of finance through business groups/connected lending operations; among others.

In applying the growth diagnostic methodology to the case of Mongolia we rely both on direct and indirect evidence to identify "bottlenecks" to economic growth. In addition, since the aggregate picture typically hides important details at the industry level, we use aggregate as well as industry and firm-level data. With the exception of livestock herding, the official GDP statistics on which we rely do not capture the activities of Mongolia's large and growing informal sector, which produced output equivalent to 18 percent of GDP[8] and employed as much as 35 percent of Mongolia's working-age population in 2005,[9] compared to 20 percent in the early nineties. Official export data understate the importance of cashmere exports since a large share of raw cashmere gets smuggled to China every year.[10] The rise of artisanal mining activities implies a downward bias in statistics of output and employment in the mining sector (World Bank 2003).

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[5] Consistent data series prior to Mongolia's 1993 transition are unavailable for most key variables and at the desired level of disaggregation.

[6] Economic growth is also influenced by religious, cultural, social conditions and beliefs. These factors while not explicitly part of the growth diagnostic framework can be addressed successfully through effective implementation of judicial laws. Examples from the countries in Central and Eastern Europe which joined the EU in recent years suggest that harmonization of legal frameworks is as an effective way of addressing differences including those stemming from religion and culture.

[7] See Hausmann, Rodrik, Velasco (2005) and Rodrik (2004a and 2004b).

[8] Source: World Bank (2006a).

[9] Authors' estimates based on data from the Government of Mongolia that indicate an increase of 23 percent in the number of "non-employed" people and a forty percent decline in registered unemployed.

[10] According to World Bank (2003) in 2002 over 38 percent of the raw cashmere produced was smuggled to China.

Benchmarking the performance of an economy is a way to identify factors that hold private investment in a country low.[11] Since benchmarking for growth diagnostics is done with the objective of identifying the key constraints to private investment and growth, it is important to select an appropriate group of comparator countries. The core group of comparators must consist of countries that share similar characteristics with the country of interest, and are at a similar stage of development, but it should also include good performers in the region, as well as regional averages for countries in different income groups. The group of comparators however can vary depending on the question one needs to address. For example, when one would like to assess whether the cost of capital is high in a country, the group of comparators must include countries with similar credit worthiness ratings. When addressing questions about logistics and transport costs, the group of comparators must include land-locked countries with similar types of traded goods.

While useful for identifying problem areas, benchmarking for growth diagnostics has limitations and should be used with caution. Comparisons in benchmarking exercises are meaningful only if the indicators are constructed following procedures that are consistent across countries. It is therefore important to use databases that are transparently documented in terms of data sources and data construction methods. A change in the set of comparator countries for an indicator may change the conclusions from a benchmarking exercise, suggesting that benchmarking should be used jointly with other methods to shed light on constraints to growth. Evidence that a country ranks low on a given indicator does not imply that the area is a 'binding' constraint to growth. There are countries that rank very low in terms of corruption, for instance, but have booming economies. Finally, economists should be aware of what the indicators used in benchmarking exercises measure and how they are constructed. This is especially important for indicators that proxy difficult to measure aspects of the business environment.

Benchmarking is only one approach to identifying the key factors constraining private investment in a country. A thorough growth diagnostics exercise necessitates other methods including analyses based on macroeconomic, investment climate and trade data, industry studies, and other sources. This type of in-depth growth analysis is presented here in the case of Mongolia and can be used as an example of "how to" of growth diagnostics in the context of other low income countries. Next section lays out the steps we follow to formulate a growth diagnosis.

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[11] Benchmarking, initially used only in industry, is now widely applied in many areas. Benchmarking the investment climate, for instance, involves comparing different aspects of a country's investment climate with those of their competitors. Benchmarking is also used in order to identify the potential for productivity improvements, for instance, that of labor productivity. Hausmann, Rodrik and Velasco (2005) also use benchmarking to identify binding constraints.

Figure 1: Growth Diagnostic Tree adapted from Hausmann et al. (2005)

Problem: Low levels of private investment and entrepreneurship

$$\frac{\dot{c}_t}{c_t} = \frac{\dot{k}_t}{k_t} = \sigma\left[r\left(1 - \tau\right) - \rho\right]$$

Low return to economic activity

High cost of finance

Low social returns

Low appropriability

Inadequate international finance

Inadequate local finance

government failures

market failures

poor natural resource management

poor geography

infrastructure bottlenecks

low human capital

micro risks: property rights, corruption, taxes

macro risks: financial, monetary, fiscal instability

information externalities: "self-discovery"

Need for better coordination

low domestic saving

poor inter-mediation

3. THE DIAGNOSTICS FOR MONGOLIA

3.1 Is private investment in Mongolia low?

Gross domestic investment in Mongolia has been high by international standards. In the past ten years gross domestic investment in Mongolia averaged 34.5 percent of GDP (Table 1). This average investment-to-GDP ratio was comparable to the average investment ratio in the East Asia region, and was much higher than the average investment ratio in the low income countries as well as land-locked, resource-rich countries in Central Asia.

However, the majority of investment in Mongolia was funded by foreign funds, mostly foreign aid. The share of foreign aid in gross domestic investment averaged 60 percent in the past ten years (Table 1). In 2004 this share was approximately 4 times the share in low income countries. Domestic investment has grown slightly, but is a minor share in total investment (Figure 2). The small share of domestic investment implies that the economy is dependent on foreign funds which are uncertain by nature, and may decline substantially if global demand for commodities slumps.

Foreign direct investment (FDI) grew at a rapid pace in the past ten years. As a share of GDP FDI rose from 1.4 percent in 1996 to 10.4 percent in 2003 before it fell down to 5.8 percent in 2004, but recovered to 9.8 percent in 2005. The average share of FDI for the ten year period was 5.2 percent of GDP and was higher than the average of East Asia and more than three times the average of low income countries (Table 1). Most of foreign direct investment however was attracted by a single sector – mining.[12] The share of FDI attracted by mining rose from 46 percent of total FDI in 2001 to 68 percent of total FDI in 2005.[13]

The bulk of private investment in Mongolia went into a limited number of sectors – mining and construction, and into a very small number of firms operating in these sectors.[14] In 2004 investment in the construction and mining sectors accounted for nearly 60 percent of investment in Mongolia (Table 2). Investment in the mining sector alone accounted for 15 percent of total investment, 33 percent of investment in machinery, equipment and tools, 59 percent of private investment, and a large share of foreign investment.

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[12] Some FDI went into the service sectors, but a large portion of it was low quality investment made by individuals rather than companies (Source: Mr. Otgonbat, Vice Chairman of Foreign Investment and Foreign Trade Agency.)

[13] Foreign direct investment in mineral and petroleum exploration and development activities expanded from US$148 million in 2004 to US$191 million in 2005.

[14] In 2004 private firms operating in mining and construction were 0.7 percent and 2.7 percent of all private firms, respectively. A large number of Mongolian private firms provided wholesale and retail trade services (40 percent), and utilities, social sector services, and public administration services (32.9 percent). Manufacturing firms represented only 5.7 percent of all private firms, private agricultural firms – 5.1 percent, hospitality firms – 3.2 percent, transport – 2.1 percent, financial real estate and business – 7.5 percent.

Table 1. Gross capital formation, national and foreign savings

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	Average
Foreign savings in Mongolia	3.1	-9.8	7.7	5.7	7.4	6.1	9.4	7.2	-3.9	0.3	3.3
National savings Mongolia	26.8	37.9	27.5	31.3	28.8	30.0	22.8	30.8	40.4	35.2	31.1
Gross capital formation (% of GDP)											
Mongolia	29.9	28.1	35.2	37.0	36.2	36.1	32.2	38.0	36.5	35.5	34.5
Cambodia	14.5	14.8	11.7	17.4	16.9	18.7	20.1	25.2	25.8	..	18.3
Vietnam	28.1	28.3	29.0	27.6	29.6	31.2	33.2	35.4	35.6	..	30.9
Azerbaijan	29.0	34.2	33.4	26.5	20.7	20.7	34.6	53.2	53.5	..	34.0
Kazakhstan	16.1	15.6	15.8	17.8	18.1	26.9	27.3	25.7	26.3	27.5	21.7
Kyrgyz republic	25.2	21.7	15.4	18.0	20.0	18.0	17.6	11.8	13.8	20.4	18.2
Uzbekistan	29.2	21.7	20.2	17.5	16.3	19.6	20.3	20.2	24.5	25.1	21.5
Ghana	21.2	24.8	23.1	20.9	24.0	26.6	19.8	22.9	27.9	29.6	24.1
Uruguay	15.2	15.2	15.9	15.1	14.0	13.8	11.5	13.1	13.3	..	14.1
East Asia and Pacific	36.5	34.8	30.8	29.5	29.9	30.8	31.5	33.1	34.4	..	32.4
Low Income Countries	20.9	21.1	20.8	21.9	21.3	21.5	21.9	22.3	23.0	..	21.6
Foreign aid (% of gross capital formation)											
Mongolia	56.9	84.9	59.5	66.4	63.5	57.8	57.1	51.4	44.3	..	60.2
Cambodia	82.9	65.8	92.4	45.2	64.6	59.3	59.2	46.5	38.0	..	61.5
Vietnam	13.6	13.1	14.9	18.0	18.2	14.2	11.0	12.6	11.4	..	14.1
Azerbaijan	10.5	13.6	8.1	14.0	12.8	19.7	16.2	7.8	3.8	..	11.8
Kazakhstan	3.7	4.1	6.4	5.8	5.7	2.5	2.8	3.4	2.3	..	4.1
Kyrgyz republic	50.1	62.5	94.2	125.8	78.4	69.0	65.8	88.1	84.9	..	79.9
Uzbekistan	2.2	4.4	5.2	5.2	8.3	6.9	9.6	9.5	8.3	..	6.6
Ghana	44.3	28.9	40.7	37.9	50.3	45.6	53.3	54.7	54.9	..	45.6
Uruguay	1.1	1.0	0.7	0.7	0.6	0.6	0.9	1.1	1.3	..	0.9
East Asia and Pacific	1.5	1.3	1.9	2.1	1.7	1.3	1.1	0.9	0.7	..	1.4
Low Income Countries	14.6	12.1	12.8	10.9	11.0	11.9	13.4	13.3	11.9	..	12.4
FDI (% of GDP)											
Mongolia	1.4	2.4	2.0	3.3	5.7	4.2	7.0	10.4	5.8	9.8	5.2
Cambodia	8.4	5.9	7.8	6.6	4.0	3.9	3.6	1.9	2.7	..	5.0
Vietnam	9.7	8.3	6.1	4.9	4.2	4.0	4.0	3.7	3.6	..	5.4
Azerbaijan	19.7	28.1	23.0	11.1	2.5	4.0	22.3	45.1	41.0	..	21.9
Kazakhstan	5.4	6.0	5.2	9.4	7.0	12.8	10.5	6.8	9.5	..	8.1
Kyrgyz republic	2.6	4.7	6.6	3.6	-0.2	0.3	0.3	2.4	3.5	..	2.6
Uzbekistan	0.6	1.1	0.9	0.7	0.5	0.7	0.7	0.7	1.2	..	0.8
Ghana	1.7	1.2	2.2	3.2	3.3	1.7	1.0	1.8	1.6	..	2.0
Uruguay	0.7	0.6	0.7	1.1	1.3	1.5	1.4	3.7	2.4	..	1.5
East Asia	3.9	4.0	4.1	3.3	2.6	2.7	2.9	2.6	2.5	..	3.2
LICs	1.3	1.5	1.3	1.2	1.3	1.5	1.6	1.4	1.4	..	1.4

Source: World Bank (SIMA)

Domestic private investment has increased in importance, but in 2004 its share in total investment was still relatively small and only one third of private domestic investment was financed by bank loans (Table 3). Although domestic credit to the private sector has

been growing at high rates,[15] the vast majority of bank loans has been short term and has financed wholesale and retail trading activities, not investment projects.[16]

Table 2: Composition of Total Investment, 2001-04 (Percentage share of total investment)

	2001	2002	2003	2004
Construction	29.3	34.9	40.6	41.9
Machinery, equipment and tools	44.9	50.6	49.1	46.3
o/w mining	14.8	11.2	9.1	15.4
Others	25.8	14.5	10.3	11.8

Source: Mongolian Statistical Yearbook (2004).

Table 3: Domestic Investment in Mongolia, 2001-2004

Investment	2001	2002	2003	2004
Government (% of domestic investment)	38.0	37.2	36.1	35.5
Private domestic (% of domestic investment)	62.0	62.8	63.9	64.5
Private domestic (% of investment)	21.6	22.7	23.3	26.4
Bank loans (% of private domestic investment)	16.5	30.3	30.6	31.9
Own funds (% of private domestic investment)	83.5	69.7	69.4	68.1
Bank loans (% of investment)	3.6	6.9	7.1	8.4

Source: Mongolian Statistical Yearbook (2004).

Hence, the question that follows from this is whether private investment outside the mining and construction sectors has been low because of high cost of capital or due to low rates of return. This is critical if one needs to ensure that Mongolia's future growth and employment generation is broad-based.

3.2 Is the cost of capital in Mongolia high?

Although nominal deposit rates remained stable and high in the period 2001-2005, real lending rates came down from 30 percent in 2001 to 11 percent in 2005 (Figure 3).[17] This drop in the real cost of capital was due mostly to a rise in the rate of inflation, rather than a decline in the risk premium (Figure 4). In the absence of any changes to the deposit rate and the risk premium, a drop in inflation from 13 percent in 2005[18] to 4.5 percent in 2006 is likely to reverse the decline in the real lending rate and result in an increase in the real cost of capital above 15 percent. Indeed, real deposit and lending rates have risen significantly as inflation declined in 2007 (confirm what happened to inflation in 2007).

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[15] According to the International Monetary Fund (2005) private credit grew at a rate of more than 200 percent in 2002 and 2003, and 33 percent in 2005. In 2005 domestic credit to the private sector was close to 40 percent of GDP- higher than domestic credit to the private sector in low income countries, but lower than domestic credit in Vietnam, and the average for the middle and high income countries.

[16] Source: World Bank (2006b) and Fitch Ratings (2006).

[17] The real lending rate is defined as the rate charged on loans to prime customers on loans of any maturity.

[18] In 2005 inflationary pressures in Mongolia were much higher than those in comparator countries such as Vietnam, Cambodia, Kazakhstan, Kyrgyz Rep., and Uruguay.

3.2.1 Is the nature of international finance the reason for the high cost of capital?

The reasons for the high cost of capital in Mongolia cannot, however, be traced to inadequate or expensive international finance. Mongolia's official debt is primarily concessional, long-term debt. The share of concessional debt in total external debt averaged 85 percent over the past ten years, and is much higher than the average for low income countries (51 percent) and East Asia (20 percent) (Table 4). Mongolia continues to have little trouble obtaining concessional finance as the levels of these external inflows have remained relatively stable over the past decade. In December 2005, concessional loan agreements have been entered into with China, and South Korea, among others. Significant additional grant financing over the next few years is expected.

Figure 2: Domestic investment is on the rise in Mongolia…
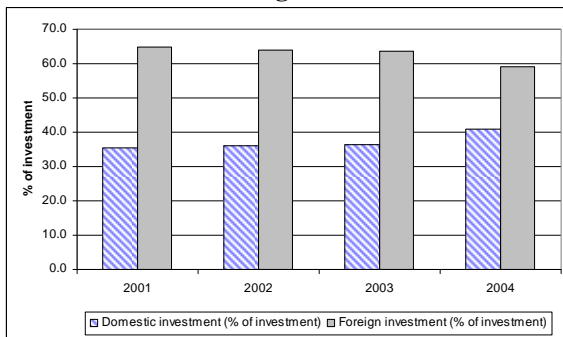
Source: Mongolian Statistical Yearbook (2004).

Figure 3: as the cost of capital declines.
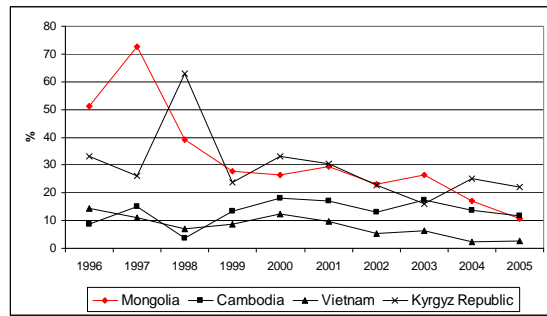
Source: World Bank (SIMA).

Figure 4: Real cost of capital has declined primarily due to increase in the inflation rate rather than declines in the risk premium.
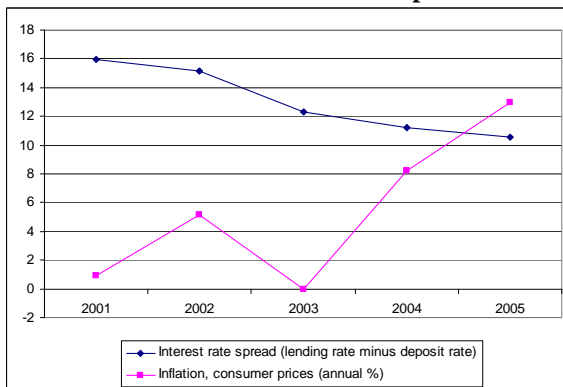
Figure 5: Cost of capital is high because of high deposit interest rates and risk premiums.
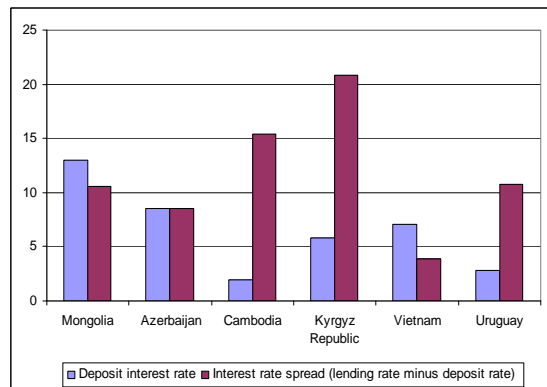
Inward FDI was high in Mongolia (at 9.8 percent of GDP, compared with the median of only 1.7 percent for Fitch's 'B' rated countries).[19] Rising official reserves and commercial bank assets helped push the 2006 liquidity ratio to over 600 percent (notably higher than the comparable Fitch's 'B' country group median of 170 percent).

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[19] Insurers in the Fitch's 'B' peer group are viewed as weak with a poor capacity to meet policyholder and contract obligations.

Table 4: External Finance in Mongolia is not Costly

	1996	1997	1998	1999	2000	2001	2002	2003	2004	Period Average
External debt (% of GNI)										
Mongolia	45.8	58.3	74.7	102.4	96.0	87.2	93.1	116.6	94.7	85.4
Cambodia	68.9	70.2	80.5	73.5	74.4	73.9	74.1	75.3	72.5	73.7
Vietnam	108.2	82.6	84.1	82.0	41.7	39.0	38.7	40.6	40.1	61.9
Azerbaijan	14.1	12.9	16.0	23.7	27.2	24.2	25.6	25.5	25.4	21.6
Kazakhstan	14.0	18.7	27.9	37.5	72.5	70.8	73.3	78.2	85.1	53.1
Kyrgyz republic	63.6	78.7	96.1	147.7	142.1	117.5	119.5	109.2	99.3	108.2
Uzbekistan	17.1	19.9	22.5	29.1	34.1	43.4	50.1	50.1	42.0	34.3
Ghana	85.3	84.6	86.2	85.1	126.6	121.9	115.4	101.2	80.0	98.5
Uruguay	29.4	31.1	34.8	35.8	40.0	53.2	87.3	106.4	97.7	57.3
East Asia & Pacific	33.4	34.3	38.4	35.3	29.7	28.9	25.9	24.0	22.5	30.3
Low income countries	53.2	48.8	51.1	48.0	44.8	41.7	41.4	39.4	35.6	44.9
Concessional debt (% of total external debt)										
Mongolia	76.2	81.7	87.0	89.6	91.2	91.5	90.3	76.3	85.2	85.4
Cambodia	90.8	90.5	90.5	90.2	88.2	88.4	88.9	89.3	89.0	89.5
Vietnam	75.8	15.3	20.0	24.0	61.3	66.4	72.4	73.9	71.4	53.4
Azerbaijan	14.7	23.2	23.3	28.3	29.4	35.4	46.1	53.8	57.7	34.7
Kazakhstan	4.4	4.1	4.4	6.5	3.3	2.6	2.9	3.3	3.0	3.8
Kyrgyz republic	32.3	34.6	41.9	46.1	48.2	56.6	62.5	68.0	74.5	51.6
Uzbekistan	25.9	27.1	28.7	26.6	30.4	30.1	32.7	35.6	37.6	30.5
Ghana	62.9	65.7	68.1	70.7	73.3	70.4	71.7	75.0	74.3	70.2
Uruguay	3.6	3.5	3.2	3.3	2.6	2.1	1.7	1.5	1.4	2.6
East Asia & Pacific	19.2	14.1	17.7	20.0	20.9	19.3	21.2	22.3	22.1	19.6
Low income countries	49.4	45.8	47.5	49.4	49.0	50.2	52.9	56.9	56.4	50.8
Short-term debt (% of total external debt)										
Mongolia	0.9	4.2	3.9	2.4	1.4	1.6	4.3	19.4	11.0	5.4
Cambodia	4.5	5.2	5.5	6.0	8.6	8.3	7.5	7.1	7.8	6.7
Vietnam	14.3	10.8	9.8	10.2	7.2	6.2	5.9	8.1	12.0	9.4
Azerbaijan	3.5	0.8	0.2	2.7	11.6	7.9	5.5	5.9	6.9	5.0
Kazakhstan	7.6	8.6	7.0	7.7	7.7	9.0	10.7	12.5	11.1	9.1
Kyrgyz republic	0.8	2.5	1.9	3.5	7.1	2.8	1.0	1.9	0.4	2.4
Uzbekistan	3.8	14.5	4.4	12.7	6.1	10.4	6.9	4.4	3.6	7.4
Ghana	11.2	11.7	11.3	11.0	9.4	8.7	8.5	9.2	10.0	10.1
Uruguay	28.2	28.5	26.5	24.0	23.5	30.3	15.1	12.6	16.0	22.7
East Asia & Pacific	26.1	25.1	15.9	13.5	12.6	20.5	22.7	26.0	29.7	21.3
Low income countries	11.8	10.7	10.0	10.0	8.0	7.8	7.5	7.6	8.5	9.1

Source: World Bank (SIMA); Data for 2005 were not available.

3.2.2 Is the nature of local finance the reason for the high cost of capital?

Looking at the cost and access to domestic financing, domestic savings have fluctuated a lot during the past decade, but on a trend basis have increased substantially in the past few years. As a share of GDP, domestic saving fell from 19 percent in 2001 to 11 percent a year later,[20] but increased to 25 percent in 2004, and rose again slightly thereafter (Table 5). Although low compared to saving in East Asian countries, the average ratio of

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[20] The fall in domestic saving in 2002 reflected the shock of bad weather to agriculture.

domestic saving to GDP in Mongolia for the period 1996-2005 (22 percent) is higher than the average for low income countries with comparable interest spreads between deposit and lending rates (Tables 6 and 7).

Table 5: Gross Domestic Savings (% of GDP)

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	Period Average
Mongolia	22	34	22	23	21	19	11	18	25	26	22
Cambodia	-4	3	-1	4	5	11	12	16	15	..	7
Vietnam	17	20	22	25	27	29	29	27	28	..	25
Azerbaijan	3	10	2	13	21	24	27	30	30	..	18
Kazakhstan	15	13	11	20	26	26	27	31	35	37	24
Kyrgyz republic	-1	14	-6	3	14	18	14	5	4	0	7
Uzbekistan	23	19	20	17	19	20	22	27	32	33	23
Ghana	13	4	10	3	5	7	8	11	8	11	8
Uruguay	15	15	15	14	12	12	13	15	15	..	14
East Asia & Pacific	37	37	36	34	34	34	35	37	38	..	36
Low income countries	18	18	17	18	20	20	20	20	20	..	19

Source: World Bank (SIMA).

Table 6: Interest Rate Spreads (lending minus deposit rate), 1996-2005

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Mongolia	43.2	45.7	19.3	15.9	15.9	15.9	15.2	12.3	11.2	10.6
Cambodia	10.0	10.4	10.5	10.2	10.5	12.1	13.7	16.5	15.8	15.4
Vietnam	20.1	5.9	5.2	5.3	6.9	4.1	2.6	2.9	..	3.9
Azerbaijan	..	..	..	7.4	6.8	11.2	8.7	5.9	6.5	8.5
Kyrgyz republic	28.3	9.8	37.7	25.3	33.5	24.8	18.9	14.1	22.6	20.8
Uruguay	43.5	37.6	31.6	28.5	27.8	27.0	55.8	29.3	17.5	10.8
East Asia & Pacific	6.1	6.2	5.6	5.9	6.9	5.9	5.9	5.9	6.3	5.5
Low income countries	11.5	10.6	12.7	12.7	12.9	13.7	13.0	12.4	11.9	11.0
Low & middle income	8.7	8.4	9.3	8.3	8.4	8.3	8.6	8.2	7.4	7.3
Middle income countries	7.6	7.4	7.7	7.5	7.6	7.6	7.2	7.1	6.5	6.5
High income countries	3.9	3.5	3.8	3.9	4.1	4.1	4.1	..	..	..
World	7.2	7.0	7.6	7.1	7.4	7.1	7.2	7.1	6.5	6.5

Source: World Bank (SIMA); Note: Data for Kazakhstan, Uzbekistan and Ghana were not available.

This increase in domestic saving has been due to the strong GDP growth and balance of payments position of Mongolia over the past few years. These, in turn, have been due to favorable terms of trade, new mining operations, strong tourism revenues, remittances from abroad, and robust capital flows in the mining sector.[21] Indeed, receipts from remittances have grown significantly since 1997 (when no remittance receipts were recorded) to a peak of US$195 million in 2004. But in 2005 remittances' growth was negative for the first time since 1997, allegedly due to the closure of illegal representative

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[21] Remittances and proceeds from businesses contributed 30-40 percent of growth in deposits in 2005, according to data from BOM.

offices of Mongolian banks in South Korea. The sharp drop in Mongolia's exports of textiles and apparel has had a modest net external effect because garments were manufactured mostly using imported inputs.[22]

Given the excess liquidity in the banking system in 2005, we conclude that it is not low domestic saving, but poor financial intermediation that has been primarily responsible for the high cost of capital in Mongolia. The Work Bank's recent investment climate report (World Bank 2006b) provides compelling evidence that, with the possible exception of the wholesale and retail trade sector,[23] the degree of bank-based financial intermediation in business activity, even though improving is still very low in Mongolia.[24]

Domestic commercial bank deposit rates remain high in Mongolia compared to other emerging countries, in part due to intensive competition among financial institutions in recent years that has exerted an upward pressure on bank deposit rates, and in turn, on the commercial bank lending rates. In spite of ample liquidity in the banking system, banks—motivated, by the desire to expand their market shares—remain aggressive in attracting depositors by offering high deposit rates, and compressing their interest margins (Figure 5).[25] In fact, the average returns on commercial bank assets have declined from around 4 percent in 2002 to only 1.4 percent in 2005. In an attempt to consolidate the banking sector, the Bank of Mongolia stipulated an increase in the minimum paid-up capital requirement for commercial banks in Mongolia (from MNT 4 billion to MNT 8 billion). This attempt seemed to have failed since the vast majority of existing banks (16 out of 17) met this new threshold quickly without having to close down or merge with other banks.

The spreads between deposit and lending rates are also high compared to other countries (Figure 5). This is largely due to the difficulty banks have in assessing credit risk. In addition, the profitability of bank's non-lending assets remains low since their operating costs and required reserve ratio are high by international standards. According to firm findings of the Mongolia's Investment Climate Report (World Bank 2006b), the difficulty in assessing credit risk derives from a number of sources. The most important ones being poor corporate governance, and the lack of transparency in business operations, which makes it difficult for potential lenders to assess borrowers' creditworthiness.

The weakness of the bankruptcy and debt recovery framework in Mongolia translate into increased risks and costs of banking business. World Bank Investment Climate survey data show that bankruptcy claimants recover only 17 percent of total claims from insolvent firms in Mongolia, on average, compared to 24 percent for East Asia as a

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[22] The lifting of quotas on exports of textiles and apparel from China in 2005 had a negative effect on Mongolia's textile industry as many foreign-owned companies left Mongolia and relocated in China.
[23] The wholesale and retail sector was not covered by the Productivity and Investment Climate Survey (2004), which was the basis for the investment climate report. Also not covered by the survey are firms that failed and startups that did not make it.
[24] The degree of bank-based financial intermediation has increased in 2005 as the M2/GDP ratio rose to 52 percent from 47 percent in 2004 and credit expanded at the highest pace since 1996.
[25] In 2005 the Central Bank reduced the coupon rate on its bonds and augmented liquidity in the banking system (World Bank 2006c).

group, and 73.8 percent for OECD countries. In response, banks in Mongolia have been forced to rely entirely on collateralized lending and to charge high risk premiums on their loans to small businesses and individuals.[26] Cheap financing is only made available to a few prime customers—typically big companies. For instance, whereas large firms can obtain financing for as little as 9.6 percent per year, the annual nominal cost of micro finance can be as high as 72 percent on short term loans to individuals or small firms (Table 7).

Table 7: Banks' Lending Interest Rates (annual percentage rate on loans extended by banks in Mongolia)

	2003-III		2004-III		2005-III	
	Average	Low, high	Average	Low, high	Average	Low, high
Up to 1 year	41.5	11.0-72.0	39.0	6.0-72.0	42.0	12.0-72.0
1 to 5 years	37.8	9.6-66.0	37.8	9.6-60.0	57.6	9.6-48.0
5 and more years	33.3	7.8-58.8	17.8	12.0-23.5	17.8	12.0-23.5
Industrial use	39.9	7.8-72.0	36.0	18.0-54.0	29.5	11.0-48.0
Non-industrial use	40.8	9.6-72.0	24.0	6.0-42.0	27.0	6.0-48.0

Source: Bank of Mongolia

Access to capital in Mongolia has been limited for the majority of firms. Capital markets are underdeveloped and banks offer a limited range of products to firms[27] so bank loans are the primary instrument for raising capital from domestic sources.[28] Unlike firms in most of its neighboring countries, most Mongolian firms have relied largely on finance from informal sources for their investment and working capital needs. In 2004, only 6 percent of new investment was financed by commercial bank loans, compared to the average for East Asia (17 percent). In the same year, less than a third of the firms in Mongolia had a commercial bank loan, and of those only 3 percent had loans with maturities of more than 5 years (Figure 6). Without such long-term credit, potential productivity-enhancing investments in plants, machinery, technology upgrading of processes are difficult to undertake on a sustained basis, thereby inhibiting a firm's capabilities to scale up existing operations or improve product quality.

The high collateral requirements have also resulted in limited access to credit. Collateral-to-loan values are higher in Mongolia than in any other country in East and Central Asia. The ratio of collateral required to loan value is 224 percent in Mongolia compared to the average for East Asia (78 percent), and Europe and Central Asia (154 percent). Moreover, many people, especially in rural areas, do not have access to the collateral required by banks in the form of immovable assets (land or buildings) since the pastureland is not privately-owned (World Bank 2003). Land ownership in urban and

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[26] According to the Doing Business database, the degree to which collateral and bankruptcy laws in Mongolia facilitate lending are comparable to those in East Asia and Central Asia. Mongolia scores higher than East Asia and Central Asia in terms of rules affecting the scope, access and quality of credit information and the public credit registry coverage.

[27] Financing through leasing arrangements is practically non-existent in Mongolia.

[28] Mongolia's financial system is dominated by commercial banks. The stock market is small and illiquid, insurance companies and pension funds are small, and a commercial bond market has yet to be developed (World Bank 1997).

peri-urban ("Ger") areas is allowed in Mongolia in the form of long-term possession rights (up to 60 years with a possible one time extension of up to 40 years). However, transfer of possession rights is constrained by the need for permission from the relevant authorities. The rules and regulations for this are, however, not yet well established or published. This leads to lack of transparency in land allocation decisions in the urban and peri-urban ("Ger") areas (Sommer 2003).

Figure 6: Firms' access to credit in Mongolia
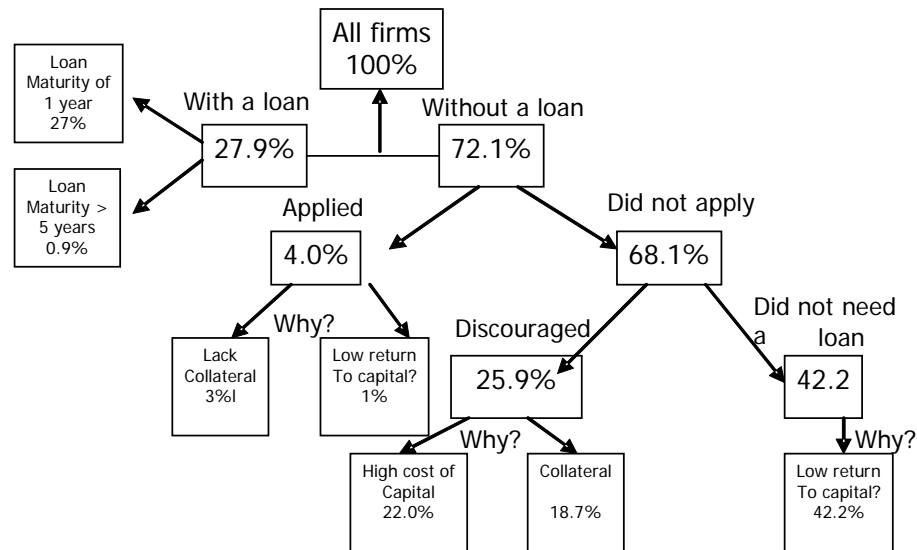
Source: Mongolia Productivity and Investment Climate Survey (PICS) 2004.

While the cost of capital is high and access to capital, especially long term financing, is limited, most of the firms that needed a loan got it. According to the 2004 Productivity and Investment Survey (PICS) 56 percent of Mongolian firms interviewed for the survey complained that the cost of capital was a severe obstacle to business growth, but only 22 percent of the firms in the survey were discouraged and did not apply for a loan because of the high cost of capital (Figure 6).[29] Similarly, the survey results on access to capital suggest that while 42 percent of firms claimed that access to credit was a severe obstacle, 70 percent of the firms either obtained a loan (28 percent of firms) or did not need a loan (42 percent of the firms) (Figure 6).

Given the large number of firms that do not need to borrow at all, it follows that the high cost of capital is not the reason for the low private investment outside mining and construction. What are the reasons for this? To answer this question we turn to an assessment of returns to private investment in the non-mining related sectors in Mongolia.

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[29] Of those that were discouraged the main reason they gave for not applying was the high cost of capital (82.8 percent or 22 percent of all survey respondents), but they also gave additional reasons which included stringent collateral requirements (72 percent), cumbersome application procedures (59 percents), and perceived corruption in the allocation of credit (15 percent).

Table 8: Selected Parameters on the Quality of the Business Environment, 2006

	Min. capital to start a firm	Recovery rate in the case of bankruptcy	Documents for export	Time for export	Cost to export
	(% of GNI per capita)	(cents on the $)	Number	Days	(US$ per container)
Mongolia	140.2	17.0	11	66	3007
Cambodia	66.2	0.0	8	36	736
Vietnam	0.0	18.0	6	35	701
Azerbaijan	0.0	32.5	7	69	2275
Kazakhstan	26.6	20.0	14	24	720
Kyrgyz republic	0.6	19.8	..	..	..
Uzbekistan	24.7	18.7	10	44	2550
Ghana	23.2	24.7	5	21	822
Uruguay	183.3	43.2	9	22	552
East Asia & Pacific	109.2	24.0	6.9	23.9	885
Europe & Central Asia	49.1	29.8	7.4	29.2	1450
L. America & Caribbean	24.1	28.2	7.3	22.2	1068
Middle East & N. Africa	859.3	28.8	7.1	27.1	923
OECD	41.0	73.8	4.8	10.5	811
South Asia	0.8	19.7	8.1	34.4	1236
Sub-Saharan Africa	297.2	16.1	8.2	40.0	1561

Source: Doing Business Survey, World Bank (2006a)

3.3 Are returns to private sector investment in non-mining-related activities low?

One way to assess the rate of return to economic activity in Mongolia is to estimate total factor productivity growth (TFP) focusing on the period since transition. [30],[31] We assume that aggregate output can be expressed as a function of physical and human capital $Y = AF(K,H)$, where Y is gross domestic product in constant 2000 purchasing power parity (PPP) prices; A is an index of total factor productivity; K is gross domestic capital stock in constant 2000 PPP prices; H is human-capital-adjusted labor input, defined as $H = LDPe^{(\phi S)}$, where L is population; D is share of population age 15-64; P is labor force participation rate; S is number of years of education per worker; ϕ is a parameter that measures the returns to education.

We consider two types of production functions. The first one is a Cobb-Douglas production function with possibly non-constant returns to scale $F(K,H) = [K^{\alpha} \; x \; H^{(1 - \alpha)}]^{\gamma}$,

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[30] PICS (2004) does not include data that allow direct estimation of rates of return to capital for individual firms.

[31] Notice that TFP growth is difficult to estimate. Small differences in assumptions can lead to very different estimate of TFP growth and growth in TFP reflect factors other than pure technical change such as increasing returns to scale, markups due to imperfect competition, and sectoral reallocations. The growth accounting method for estimating TFP growth is discussed in Ghosh and Kraay (2000). The method relies on data from the Government of Mongolia, the World Bank and IMF.

where α is a parameter between 0 and 1 that measures the relative importance of capital, and γ is a parameter that measures the extent of returns to scale. Reasonable values of α range from 0.3 to 0.5. If $\gamma=1$ ($\gamma > 1$) ($\gamma < 1$) there are constant (increasing) (decreasing) returns to scale. Reasonable values of γ range from 0.8 to 1.2. The second one is a constant-returns-to-scale constant elasticity of substitution production function: $F(K, H) = [\alpha K^{\rho} + (1 - \alpha)H^{(1 - \rho)}]^{(1/\rho)}$ where $\rho = (\sigma-1)/\sigma$ is the elasticity of substitution between K and H. When $\sigma = 1$ this reduces to the Cobb-Douglas case above with $\gamma=1$. Reasonable values of σ range from 0.8 to 1.2.

To estimate the level and growth rate of A, we require data on Y, K, L, D, P, and S. These are drawn from the following sources. Real GDP and gross domestic investment in constant 2000 U.S. dollars adjusted for differences in PPP come from World Bank's *World Development Indicators*. Data on population, the share of population aged 15-64, and the labor force participation rate are computed based on data from the World Bank's *SIMA*. We assume that the labor force participation rate is an average of the labor force participation rates for females and males. Data on the stock of years of education in 1989 and 1998 are obtained from Mongolia's *Living Standards Measurement Survey* (LSMS), 1998. Numbers for the other years were estimated assuming a constant annual growth rate in the human capital stock. The parameter ϕ, which measures the returns to education (i.e. the percentage increase in worker productivity due to an additional year of education) is assumed to be 10 percent.

Capital stocks are constructed using the perpetual inventory method which requires information on the initial capital-output ratio in 1992, depreciation rates (δ), and gross domestic investment in constant U.S. dollars adjusted for differences in PPP (I). For most developing countries, reasonable values for the initial capital-output ratio range between 1 and 2, and for the depreciation rate are between 0.04 and 0.08. Following Ghosh and Kraay (2000) we use initial capital-output ratio of 1 and $\delta = 0.06$ in all calculations.

This analysis suggests that TFP growth has improved in recent years, and in 2004 productivity rose by nearly 5 percent (Figure 7). The result that productivity growth was positive in 2004 holds under all plausible sensitivity scenarios (Table 9).

Another way to measure the productivity of capital or the rate of return to capital (r) is to compare the rate of real per capita GDP growth (g) and the investment share in GDP (S_I) as in $r = g / S_I$. A cross-country regression of real per capita growth on investment shares in a sample of countries in Favaro (2005) suggests that countries with higher investment shares tend to grow at higher per capita growth rates. According to this estimation, Mongolia's real per capita annual growth rate, which averaged 2.6 percent in the period 1996-2004, was much higher than the one suggested by the average of 2 percent for the countries in the sample.[32] In 2004, Mongolia's rate of return to capital accelerated much above the average as real per capita growth climbed above 9.3 percent, while its investment share stayed close to 36 percent.

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[32] Mongolia's average investment share for the period 1996-2004 was 34.4 percent.

Figure 7. Growth Accounting exercise for Mongolia since transtion
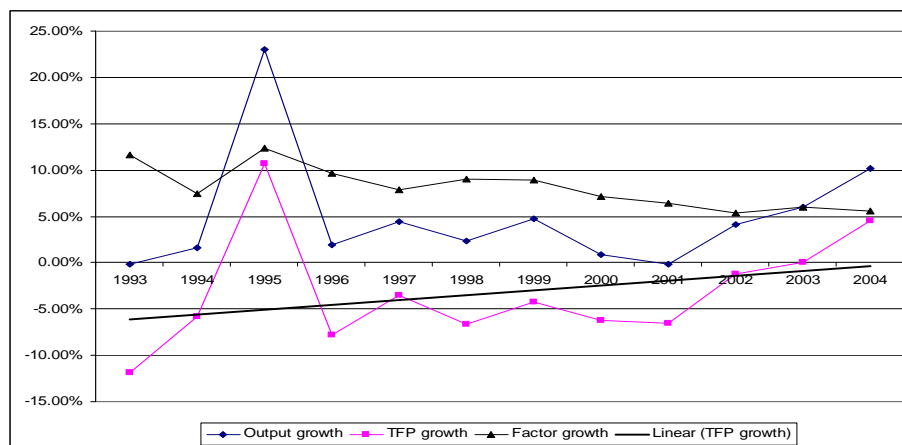
Source: Authors' estimates based on the following assumptions: Cobb-Douglas production function with CRTS (γ=1) and capital share α=0.5.

Table 9. Sensitivity analysis of TFP growth in 2004

	TFP growth estimates in 2004 (%) (Cobb-Douglas)		
	α=0.3	α=0.4	α=0.5
Γ=1 (CRTS)	5.8	5.2	4.5
Γ=1.2 (IRTS)	5.0	4.2	3.4
γ=0.8 (DRTS)	6.7	6.2	5.7
	TFP growth estimates in 2004 (%) (CRTS CES)		
	σ=0.8	σ=1	σ=1.2
α=0.5	7.1	4.5	2.6

Source: Authors' estimates
Note: Growth rates are in log form.

Although the aggregate indicators suggest that Mongolia used capital efficiently, not all sectors enjoyed high returns to capital. Over the past two years, a number of sectors seemed to lag behind the better performing ones in the past 2 years, and in two sectors—manufacturing and transport—the returns to capital were not only low, they were negative (Table 10). Mongolia's structure of production has evolved in a way that has increased its dependence on ores and metals (Table 11).[33] The share of primary commodities in total merchandise exports grew from 67 percent in 1992 to 87 percent in 2005, while the share of manufactured exports dropped from 33 percent to 13 percent (Table 12). At the same time the non-metal manufacturing base has narrowed considerably, and consists mainly of textiles and apparel.

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[33] The mining share in total value added underestimates the contribution of the sector as it does not reflect the output of the artisinal mining sector.

Table 10. Industries' Contribution to Real Growth in Mongolia (in percentage points)

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Agriculture	1.2	1.6	2.5	1.7	-6.2	-6.2	-3.5	1.1	4.1	1.9
Industry	-1.7	-0.9	0.9	0.0	-0.2	3.7	0.4	1.6	4.0	-0.1
Manufacturing	-2.4	-1.4	0.3	-0.5	-0.4	2.2	1.2	0.7	-0.1	-2.2
Mining	0.6	0.6	0.6	0.5	0.6	1.2	-1.2	-0.3	4.1	1.7
Construction	0.1	-0.1	0.0	0.0	-0.4	0.3	0.4	1.2	0.0	0.4
Services	1.6	3.2	-0.1	-0.1	3.4	1.5	6.0	3.1	1.5	4.3
Utilities	-0.8	-0.1	0.1	0.1	0.2	0.4	0.2	0.0	0.1	0.1
Transport	0.5	0.0	0.6	0.0	1.2	1.4	2.0	1.5	1.8	-0.3
Trade	0.3	3.2	-1.2	-1.6	1.3	0.1	2.7	1.4	-0.7	4.3
Other services	1.6	0.1	0.4	1.4	0.7	-0.3	1.1	0.2	0.3	0.3

Source: Staff estimates based on data from World Bank (LDB).

Table 11. Industry Composition of Total Value-added in Mongolia (at constant producer prices)

Shares in:	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Agriculture	36.4	36.6	37.8	38.8	33.6	27.7	23.6	23.4	25.1	25.5
Industry	22.1	20.4	20.6	20.3	20.8	24.7	24.3	24.5	26.1	24.4
Manufacturing	7.8	6.1	6.3	5.6	5.4	7.7	8.6	8.8	8.0	5.4
Mining	11.5	11.7	11.9	12.2	13.2	14.5	12.9	11.9	14.6	15.3
Construction	2.8	2.6	2.5	2.5	2.2	2.5	2.8	3.8	3.5	3.6
Services	41.5	43.1	41.6	40.9	45.6	47.6	52.1	52.1	48.9	50.1
Utilities	2.8	2.6	2.6	2.7	3.0	3.4	3.5	3.2	3.1	2.9
Transport	8.2	7.8	8.1	8.0	9.5	11.0	12.6	13.4	13.9	12.8
Trade	12.9	15.5	13.8	12.1	13.7	13.9	16.1	16.6	14.4	17.7
Other services	17.7	17.1	17.0	18.1	19.4	19.3	19.8	18.9	17.5	16.7

Source: World Bank, LDB

Note: Agriculture is dominated by livestock herding.

These trends reflect favorable commodity prices and declining prices of manufactured goods, and suggest that Mongolia has grown successfully by increasing its specialization in products in which it has a comparative advantage.[34] But as a result: (i) Mongolia's economy has become more vulnerable to terms-of-trade shocks, natural disasters and environmental degradation; (ii) Mongolian manufacturing firms are now less internationally competitive, and (iii) Mongolia uses its scare resource—labor[35]—rather inefficiently. Indeed, Mongolia's share in world manufactured exports has declined, and except in mining,[36] its value added per worker is rather low (Figure 8), primarily since agriculture employs 40 percent of the country's labor force, while it contributes only 25 percent of the total value added. Not surprisingly, the highly capital-intensive mining sector posts significantly higher value-added per worker. Some may also consider these symptoms to characterize a "Dutch Disease" phenomenon.

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[34] Mongolia's vast mineral wealth includes over 6000 known mineral deposits of 80 different minerals and Mongolia's mining sector is viewed as the engine of growth.

[35] Mongolia is one of the largest landlocked countries in the world with a population of just 2.5 million.

[36] Labor productivity in the mining sector would be considerably lower if we include the output of artisanal miners.

Table 12. Composition of Mongolia's merchandise exports

	'92	'93	'94	'95	'96	'97	'98	'99	'00	'01	'02	'03	'04	'05
Primary goods	67	73	83	89	84	83	82	76	72	62	61	63	86	87
Cooper	45	42	51	53	41	35	27	26	30	28	26	26	33	31
Gold	9	6	3	11	12	21	25	21	13	14	22	25	28	31
Cashmere	3	3	7	9	12	6	7	10	10	11	6	4	5	5
Flour spar	3	2	3	4	5	4	4	4	4	4	3	3	2	2
Other primary	7	20	18	12	14	18	19	15	15	5	5	5	18	18
Manufactures	33	27	17	11	16	17	18	24	28	38	39	37	14	13

Source: World Bank (LDB)

Figure 8. Value added per worker in Mongolia[37]
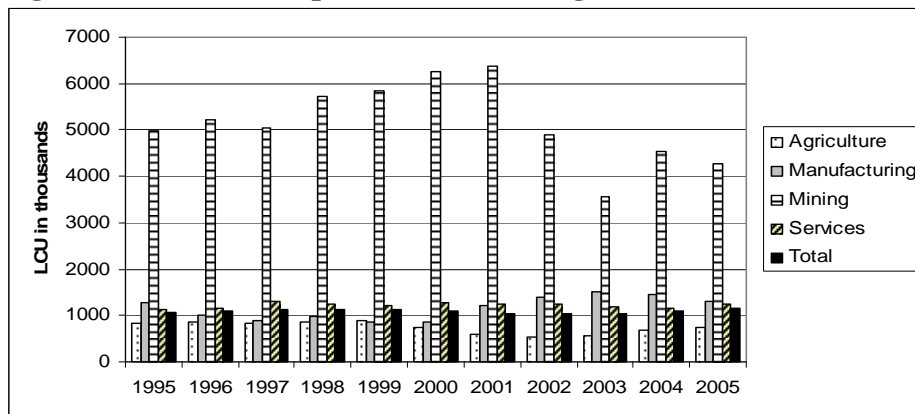
Source: Authors' estimates based on data from Mongolian Statistical Yearbook (2004) and Government of Mongolia.

3.3.1 Is poor infrastructure a binding constraint to growth?

In 2005, delays in obtaining basic service connections were still longer and service reliability was still lower in Mongolia than in other East Asian countries. However, public dissatisfaction with the inadequacy of transport services seems more widespread. Among the firms surveyed as part of the Productivity and Investment Climate Survey (2004), nearly forty percent of firms[38] mentioned transport bottlenecks as a major business impediment in Mongolia. Meanwhile, less than a quarter of the firms viewed the reliability of and access to electricity services as a major obstacle, and even fewer, viewed water and telecommunication services to be an issue.[39]

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[37] Economy-wide labor productivity growth estimated, as the value added at constant prices per worker, stagnated over the past ten years. Labor productivity in agriculture, which employs a sizable share of Mongolia's working age population, was lower than other sectors' labor productivity, and declined substantially after 2000, while in services labor productivity was only slightly higher than the average.

[38] Even though only 38 percent of firms surveyed as part of the Productivity and Investment Climate Survey (2004) perceived transportation to be the most severe constraint to growth, the share underestimates the severity of transportation services as an obstacle to trade and export growth since the sample includes both exporters and domestic-oriented firms (i.e. firms that do not trade).

[39] The results on telecommunications are encouraging as this sector creates conditions for birth and growth of new information technology firms that are vital for productivity growth. A cross-country comparison based on data from World Bank's SIMA suggests that just like in China most of the main lines are in urban

Low level of capacity utilization in Mongolian firms implies that service interruptions due to inadequacies in the provision of infrastructure services did not result in large production losses.[40] While in East Asia each day of electrical outage results in a production decline equivalent to 0.75 percent of sales, in Mongolia the loss from each day of electrical outages (22 days a year in total) is equivalent to only 0.06 percent of sales.[41]

Transportation services for freight movement however are limited, costly and unreliable, and are binding constraint to export growth. The majority of goods are moved by rail and rail transport costs are much higher than those in other landlocked countries in Central Asia (Table 13).[42] For example, while for Kazakhstan, Uzbekistan, and Kyrgyz Republic the transport costs per kilometer to transport a twenty-foot equivalent unit (TEU) container to the nearest port ($/km/TEU) are around $0.37, Mongolia's are $0.61 – comparable to the costs faced by Tajikistan whose infrastructure was severely damaged by the civil war in the mid-nineties (1992-1997). The border crossing costs in terms of $/TEU and hours spent at the border are also much higher for Mongolia than those for landlocked countries in East Asia (e.g. Lao) and South Asia (e.g. Nepal). These costs account for as much as 28 percent of the total transit cost paid by Mongolian trading companies.[43]

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areas, but the number of main lines per capita is lower than that in Kyrgyzstan and Turkmenistan, and much lower than the one in China. Telephone services have become more reliable over the past 10 years, and the number of people on a waiting list for mainlines has steadily declined over the past few years. Business telephone connection charges are comparable to those in the U.S. and have declined steadily over the past 5 years.

[40] Capacity utilization is broadly measured as the ratio of actual output to what could be potentially produced given existing human and physical resources. While capacity utilization has risen in the last three years, it is still low at just over 71 percent.

[41] The loss from each day of water supply failure in Mongolia is 0.075 percent of sales, compared to 1.3 percent of sales in East Asia (World Bank 2006b).

[42] Landlocked countries typically face much bigger constraints to trade with the outside world than coastal countries.

[43] The majority of Mongolian transit traffic is carried by rail through one rail link to the nearest port of Tianjin. Because this rail operates at the wide-gauge used in Russia, rather than the standard gauge used in China, at the border either the axles on the wagons need to be changed or containers have to be transferred from one wagon to another. This operation makes up 25 percent of the overall transport cost to port.

Table 13. Rail transport costs

	Kazakhstan	Uzbekistan	Tajikistan	Kyrgyz Rep.	Mongolia	
	Almaty	Tashkent	Dushanbe	Bishkek	Ulaan Baator	
	Trade	Trade	Trade	Trade	Exports	Imports
Distance to nearest port* (km)	3380	2720	2040	3100	1700	1700
Cost ($/TEU/km)	0.37	0.35	0.59	0.34	0.61	0.87

Source: staff estimates based on data for Kazakhstan, Uzbekistan, Tajikistan, Kyrgyz Republic from Chapter 5 in Broadman (2005) and data on Mongolia from World Bank (2006b).
*Karachi for Kazakhstan, Uzbekistan, Tajikistan, Kyrgyz Republic; Tianjin for Mongolia.

Although it is possible to transport goods from China to the border with Mongolia by road and then to the capital city by rail, the transfer extends the time and adds to the total transport cost. In fact, it costs more to transport goods from China to Mongolia by road-rail, then only by rail. While air transport accounted for only 0.02 percent of all freight movement in 2000, and has been used to transport mostly livestock-based products, international air services have been a binding constraint to growth of Mongolia's tourism industry as they are unreliable and lack peak period capacity. During the short summer months, when most tourists would like to visit the country, there are one or two daily services from a few destinations and tour operators indicate short supply of seats and unreliable advance reservation system (World Bank 2006b).

In Mongolia transport costs for imports are much higher than transport cost for exports. The transport costs from the port of Tianjin to Ulan Bator, for instance, are 42 percent higher than the already high transport costs for exports (Table 13).[44] In addition, transit times by rail are long and uncertain[45] as a result of complex transit procedures, including customs and trade rules. Whereas the border crossing time for the other landlocked countries in East Asia is under 6 hours on average, with a maximum of 25 hours, the border crossing time for Mongolia is 25 hours on average, with the maximum extending to 75 hours.[46] The uncertainty about the hours spent at the border implies that exporters find it difficult to meet the delivery requirements of overseas buyers or must incur additional storage costs if they deliver the goods early.

High trade costs due to costly and unreliable transportation services, lengthy and complex transit procedures, including customs and trade rules (Table 18), impede access of Mongolian firms to foreign markets and potentially cost Mongolian firms market opportunities. Access to foreign markets is critical to a small, open economy like Mongolia because it allows domestic producers to realize economies of scale and take part in global production sharing. Moreover, the high cost of transport services will prove to be a much bigger problem for Mongolia's economy in an environment of weak prices

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[44] Since the export volume is only 10 percent of the import volume transported in containers along the Ulan Bator-Tianjin corridor, this imbalance raises the transport cost for imports because a fee for an empty container adds to the transport cost $436 per TEU by rail-rail and $514 per TEU by road-rail.

[45] Source: Mongolia's Ministry of Infrastructure (2002).

[46] Source: Application of UNESCAP Time/Cost-Distance Model and Route Analysis, presentation by Geetha Karandawala, Chief, Transport Facilitation Section, Transport and Tourism Division, UNESCAP at the National Workshop and Advisory Services on Trade and Transport Facilitation Ulaanbaatar, Mongolia, 17-19 April 2006. See also Table 18.

for copper and gold, when previously profitable operations may become non-viable, thereby potentially leading to a severe drop in economic activity and trade volumes. Finally, high trade costs impede the process of economic diversification in Mongolia – an issue that we turn to next.

3.3.2 Do Mongolian Firms Innovate?

According to Hausmann and Rodrik (2003) diversification of the productive structure requires "discovery" of an economy's cost structure. Firms must experiment with new product lines, adapt new technologies from abroad to local conditions, and "discover" which products they can produce at low enough cost to be profitable and competitive. Mongolia is the 37th least diversified economy among a group of 100 developing countries. Mongolia is less diversified than its comparators, which include other land-locked, resource-rich countries, except Cambodia (Figure 9).

Since 1990 Mongolia's dependence on primary goods has grown and the top five exports in terms of value have claimed an ever increasing share of exports, which in 2004 was 90 percent (Figure 10). The manufacturing base is very narrow and in 2005 comprised of three product groups – metals, which accounted for 61 percent of manufactured exports, textiles (18 percent), and apparel (13 percent). All remaining products – including metal products - add up to just 8 percent of exports.[47]

Even though Mongolia's manufacturing base is narrow, it is not because firms do not *attempt* to diversify into and export new products. As a way to assess the level of entrepreneurial effort or "self discovery" in Mongolia, we looked at the composition of newly exported goods in recent years. When measured at the 4 digit level of the Harmonized System the number of exported products has grown from 351 in 2002 to 462 in 2005 – an increase of 32 percent. The increase could have been much higher had Mongolian firms managed to lower the number of discontinued exports and had they not failed to continue exporting the majority of their new export lines. According to UN COMTRADE database every year during the period 2002-06 Mongolia exported on average 135 new product lines, but discontinued 98 products, of which 62 percent were new exports (Table 14).

While manufactured goods represented a large share of new exports, they also represented a large share of new exports that were *discontinued* the following year. In 2003 and 2004 this share was 83 percent and 72 percent, respectively. This suggests that some Mongolian firms attempted to "innovate", but failed to market these products abroad and maintain these export volumes. Table 15 displays the lists of discontinued new manufactured products in 2004 and 2005. The process of "self-discovery" has been hampered by high trade costs and a variety of negative coordination externalities discussed next.[48]

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[47] See also UNIDO (2002) – a report on Mongolia's manufacturing sector.

[48] Although economic diversification of a resource based economy poses many challenges, successes in a number of countries (such as Australia, Chile and Finland) show that it is possible to use natural resources to diversify within the natural resource sector, as well as move into new sectors. It is also possible not only to use mineral wealth to diversify within and out of mining, but to start exporting mineral know-how.
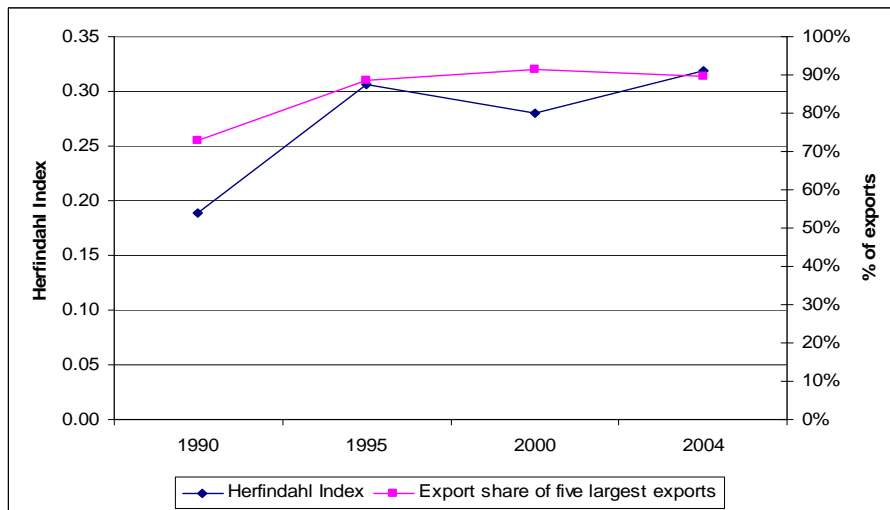
Figure 9. Degree of diversification, 2004
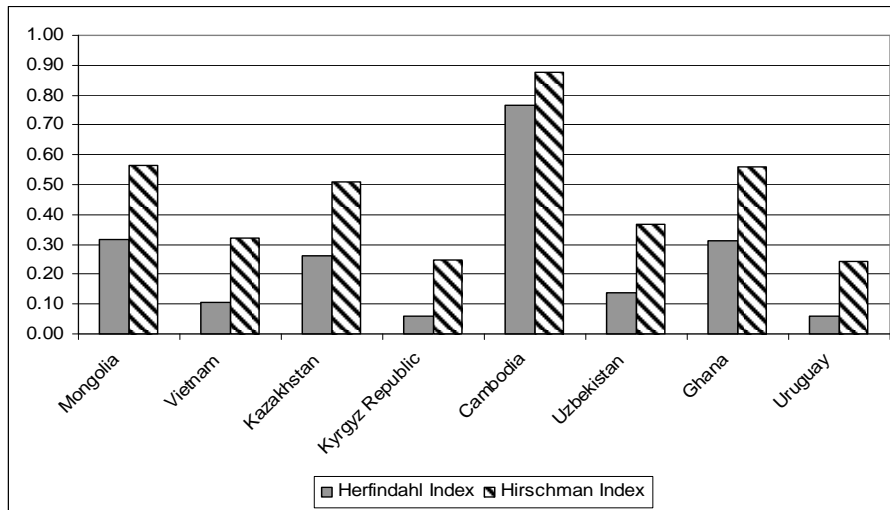
Source: Database on export diversification (PRMED).
Note: The higher the Herfindahl and Hirshman indices, the lower the degree of diversification.

Figure 10. Degree of export diversification, Mongolia

Source: Authors' estimates.

3.3.3 Are coordination failures a binding constraint to private sector growth?

Effective coordination with domestic and international partners is necessary in order to create a climate for firm "innovation" on a sustained basis which involves coordination when designing and implementing laws and regulations, economic policies, sector, resource use and trade strategies. Characteristic for a climate conducive to "innovation" are services that are taken for granted by entrepreneurs in developed countries. These include access to logistics transport networks and other types of infrastructure, marketing,

research and product quality information, health and quarantine measures to protect and improve the quality of the agricultural and livestock sector output. In a global economy entrepreneurs need to also access information on international industry standards, and applicable international trade agreements in order to compete in world markets and understand the implications of these agreements for their operations.

Table 14. Indicators of innovation in Mongolia

Number of:	2002	2003	2004	2005
Exported goods	351	393	436	462
New exports		120	145	139
New manufactured exports		99	104	
Discontinued exports		78	102	113
New exports discontinued next year		63	71	
New manufactured exports discontinued next year		51	51	

Source: Authors' estimates based on UN COMTRADE data, HS 4 digits.

In developing countries poor quality or lack of such services is a serious obstacle to output expansion of existing products, improving the quality of existing goods, and new product development ("self-discovery"). In Mongolia poor transport logistics and limited understanding among firms of how to comply with international quality and environmental standards, poor ability to market products in domestic and foreign markets stem from coordination failures.[49] We use a few specific examples of coordination failures in Mongolia to clarify these points.

In Mongolia, the cashmere textile industry offers an example of coordination failures that have stunted its growth in recent years (World Bank 2003). The industry is an *oligopsony*, (in which a few processors of cashmere have *monopsonistic* power over a large number of herders supplying raw cashmere). Herders operate in remote areas, lack information, and are often forced to sell their cashmere either to traders at the farm gate or at informal provincial markets at 10 to 45 percent discounts from the prices in the main market in Ulaanbaatar. Herders realize that poor quality raw cashmere is a problem and are reluctant to allow buyers to separate their raw cashmere into different grades. They fear that they may not be able to sell the rejected cashmere, and therefore prefer to sell it in one lot. Buyers have responded by buying unsorted raw cashmere at lower prices in order to hedge the risk of poor quality.

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[49] For instance, the main obstacle to expanding meat exports to Russia is primarily the current ban on such imports from Mongolia that was put in place after the outbreak of "foot-and-mouth" disease in 2001.

Table 15. New manufactured exports discontinued in 2004 and 2005

HS No.	2004	HS No.	2005
3208	Paints and varnishes	3214	Glaziers' putty, grafting putty
3306	Preparations for oral or dental hygiene	3302	Mixtures of odoriferous substances
3402	Organic surface-active agents	3305	Preparations for use on the hair
3405	Polishes and creams, for footwear	3502	Albumins
3603	Safety fuses; detonating fuses	3916	Monofilament
3813	Preparations and charges for fire-e	3919	Self-adhesive plates, sheets, film
4008	Plates, sheets, strip, rods and pro	3921	Other plates, sheets, film, foil
4410	Particle board and similar board	4005	Compounded rubber
4411	Fibreboard of wood or other	4404	Hoopwood; split poles; piles
4503	Articles of natural cork.	4601	Plaits and similar products
4602	Basketwork, wickerwork and other	4904	Music, printed or in manuscript
4818	Toilet paper and similar paper	4909	Printed or illustrated postcards
5110	Yarn of coarse animal hair	4910	Calendars of any kind, printed
5804	Tulles and other net fabrics	5113	Woven fabrics of coarse animal hair
5911	Textile products and articles	5509	Yarn (other than sewing thread)
6005	Warp knit fabrics	5601	Wadding of textile materials
6006	Other knitted or crocheted fabrics.	5801	Woven pile fabrics and chenille fabrics
6303	Curtains (including drapes)	5805	Hand-woven tapestries of the type
6401	Waterproof footwear with outer sole	5808	Braids in the piece
6804	Millstones, grindstones, grinding w	5905	Textile wall coverings
6805	Natural or artificial abrasive powder	6112	Track suits, ski suits and swimwear
6813	Friction material and articles	6213	Handkerchiefs
6901	Bricks, blocks, tiles and other	6402	Other footwear with outer soles
6910	Ceramic sinks, wash basins	6507	Head-bands, linings, covers, hats
7004	Drawn glass and blown glass	6601	Umbrellas and sun umbrellas
7315	Chain and parts thereof, of iron	7001	Cullet and other waste and scrap
7317	Nails, tacks, drawing pins,	7010	Carboys, bottles, flasks, jars, pot
7325	Other cast articles of iron or steel	7116	Articles of natural or cultured pearls
7405	Master alloys of copper.	7213	Bars and rods, hot-rolled
7503	Nickel waste and scrap.	7314	Cloth (including endless bands)
8112	Beryllium, chromium, germanium, van	7508	Other articles of nickel.
8207	Interchangeable tools for hand tool	8305	Fittings for loose-leaf binders
8208	Knives and cutting blades, for machines	8417	Industrial or laboratory furnaces
8434	Milking machines and dairy machinery	8437	Machines for cleaning, sorting
8442	Machinery, apparatus and equipment	8438	Machinery
8445	Machines for preparing textile fibres	8461	Machine-tools for planing, shaping
8459	Machine-tools	8503	Parts suitable for use solely or pr
8504	Electrical transformers, static con	8510	Shavers, hair clippers
8532	Electrical capacitors, fixed, variable	8518	Microphones and stands
8537	Boards, panels, consoles, desks, ca	8523	Prepared unrecorded media for sound
8540	Thermionic, cold cathode or photo-cathode	8527	Reception apparatus for radio-telephone
8705	Special purpose motor vehicles	8535	Electrical apparatus for switching
8801	Balloons and dirigibles; gliders	8543	Electrical machines and apparatus
8901	Cruise ships, excursion boats	9023	Instruments, apparatus and models
9001	Optical fibres and optical fibre	9029	Revolution counters
9006	Photographic	9104	Instrument panel clocks and clocks
9208	Musical boxes, fairground organs	9110	Complete watch or clock movements
9307	Swords, cutlasses, bayonets, lances	9205	Other wind musical instruments
9601	Worked ivory, bone, tortoise-shell,	9303	Other firearms and similar devices
9609	Pencils	9611	Date, sealing or numbering stamps
9618	Tailors' dummies and other lay figures	9614	Smoking pipes

Source: UN COMTRADE data.

Herders have lacked access to finance, information and infrastructure in order to improve the quality of their cashmere. Processors could have helped herders to improve the quality of raw cashmere but have been reluctant to enter into direct marketing or vertical relationships with them because of lack of transparent and enforceable contracting rules, and the difficulty to police such arrangements due to the small size of herds per household and the long term nature of the investment.

The problem has been compounded by lack of market information available to herders, and the fact that processors have had no incentive to form strategic links with downstream agents and to improve their productivity[50] as government policies generally favor them. The export tax on raw cashmere has provided incentives to processors to offer the same price regardless of quality. Herders have responded by smuggling cashmere to China, selling quality raw cashmere to Chinese buyers, depriving domestic processing firms of high quality raw material, and forcing them to operate below capacity. High labor costs, unreliable energy supply, lack of technical skills, non-tax administrative barriers, and high transport costs have added to the problems of Mongolian cashmere processing firms.[51]

Another example of a coordination failure is the government's inability to regulate the use of critical inputs such as land and water which have led to overgrazing, near saturation of land-use capacity, and soil erosion in Mongolia. Lack of regulation of water well use and poor public sector maintenance have decreased agricultural productivity and have left herders searching long distances for water facilities. The combination of these failures and the lack of risk management have worsened the impact of bad weather on the farm sector. Since sustainability considerations preclude further growth in the size of Mongolia's herds, it is essential to improve quality and efficiency by providing additional services to farmers.[52]

There remains the need to coordinate the development of an international rail/road network to facilitate transit, international, and domestic trade, and air transport to facilitate tourism and international trade. Mongolia's poor transport network is a severe constraint to most activities in Mongolia including. Custom facilitation and transit procedures also need to be improved, as well as marketing, export promotion and product quality information, which is critical to the success of companies but somewhat scarce in Mongolia.[53] Many medium and small companies and companies operating in the informal

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[50] Labor productivity in Mongolia's cashmere processing companies is much lower than that in other countries (USAID, 2006)

[51] A study by USAID (2006) found that overall the manufacturing quality of cashmere apparel makers is good.

[52] With the outbreak of the Hoof and Mouth Disease in Mongolia in 2001 China and Russia banned exports of all animal products causing substantial losses in income of herders and processors and a dramatic decline in exports of meat products. Surveillance, diagnosis and mitigation (including vaccination programs) need to be strengthened in Mongolia, as well as access to information on sanitary and phyto-sanitary standards in other countries.

[53] According to Otsuka (2006) information about and access to markets, and access to specialized skills needed to improve product quality are critical to multi-faceted innovation, while access to credit matters only after multi-faceted innovation has taken place. His findings are based on research in a number of countries including China, Taiwan, Vietnam and Africa.

sector do not have funds to license new technologies or to send their employees to foreign markets for training. Lack of marketing skills and information is one reason why Mongolian firms miss opportunities to expand in foreign markets. For example, they have not been able to take advantage of the duty free access to the EU for 7200 products.

High protection in China and Russia on a number of key Mongolian exports has also been cited as an obstacle to export growth. Indeed, in 2003 a number of leather, wool and meat products faced tariffs above 30 percent in Russia (Table 16). Since then protection has declined in Russia, and remains high mostly on meat and meat related products (Table 16). Currently, the main obstacle to expanding meat exports is not the tariff, but the ban on imports from Mongolia related to the Hoof and Mouth disease and the SPS requirements in foreign markets. Diversification and deepening of supply chains within Mongolia's mining sector is also extremely important given the country's vast mineral wealth and high transport costs.

3.3.4 Is the tax code a binding constraint to private sector growth?

Our analysis finds that distortionary taxes, including lately in the mining sector, and complex customs and trade rules have increased the implicit cost of doing business in Mongolia. A major overhaul of the tax code which took effect in January 2007 is expected to relax this constraint somewhat, but problems related to tax administration that go hand in hand with tax burden issues (Figure 11) are outstanding.[54]

The tax base in Mongolia has been very narrow. The top 100 taxpayers provided over 90 percent of the revenues and nearly half of the firms reported zero or negative profit in 2004. Tax evasion is rampant as well, even after the recent reduction of the windfall tax liability from the raising of the "trigger price" on gold. Tax administration remains weak. There is substantial variation in the effective tax rates implicit in the taxes paid by different firms within a net income range suggesting inconsistencies in tax administration (Figure 12). The primary cause for these inconsistencies is the excessive discretion enjoyed by inspectors and their rent-seeking behavior.[55] The average number of days spent meeting with tax inspectors was considerably higher than in most other countries in East and Central Asia (Table 17). Tax officers were perceived as corrupt by 95 percent of those interviewed in a 2004 survey by Partnership for Transparency.

Mongolia uses also duty exemptions on exports in order to stimulate processing and assembly. However, duty exemptions are likely to do more harm than good to Mongolia's small open economy[56] because trade tariffs are already low and uniform (at 5 percent), tax administration is weak and exemptions are granted not only to imported

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[54] In June 2006 the government proposed a major overhaul of the tax structure including a unified 15 percent corporate income tax rate, a reduction in the VAT rate from 15 percent to 10 percent, and a reduction in the personal income tax rate to 10 percent.

[55] Source: 2004 survey by Partnership for Transparency.

[56] Mongolia can be considered a price taker both for inputs and outputs of most products (UNCTAD/WTO 2006).

Table 16. List of selected product lines facing tariffs above 30 percent in Russia

Code 6 digits	Product Description	MFN Tariff Rate
2003		
020120	Meat of bovine animals: other cuts, fresh or chilled, with bone in	30
020210	Meat of bovine animals: carcasses and half-carcasses, frozen	30
220860	Vodka	30
020220	Meat of bovine animals: other cuts, frozen, with bone in	31
650692	Other :-- Of fur skin	31
020230	Meat of bovine animals: boneless, frozen	32
020726	Meat and edible cuts and offal of turkeys, fresh or chilled	32
611710	Shawls, scarves, mufflers, mantillas, veils and the like	32
020130	Meat of bovine animals: boneless, fresh or chilled	33
160250	Other prepared or preserved meat, meal offal or blood of bovine animals	33
640320	Footwear with outer soles of leather, & uppers consisting of leather straps	34
630190	Other blankets and traveling rugs	37
640420	Footwear with outer soles of leather or composition leather	37
160100	Sausages and similar products of meat, meat offal or blood	37
020110	Meat of bovine animals: carcasses and half-carcasses, fresh or chilled	38
420310	Articles of apparel, of leather or of composition of leather	38
640510	With uppers of leather or composition leather	41
620510	Ensembles: Of wool or fine animal hair	50
020621	Of bovine animals, frozen – tongues	50
420321	Gloves, mittens and mitts, especially designed for use in sports	82
640590	Footwear with outer soles of rubber, plastics, leather or composition leather	82
621131	Other men's or boys' garments of wool or fine animal hair	105
2005		
640320	Footwear with outer soles of leather, and uppers consisting of leather straps	30
160220	Other prepared or preserved meat, meat offal or blood: of liver of any animal	30
611110	Babies' garments and clothing accessories, knitted or crocheted – of wool or fine animal hair	33
020230	Boneless cuts	36
160100	Sausages and similar products of meat, meat offal or blood	37
160249	Other prepared or preserved meat, meat offal or blood	38
020220	Other cuts with bone in	38
420329	Gloves, mittens and mitts - Other	56
020321	Frozen – Carcasses and half-carcasses	58
020621	Of bovine animals, frozen - Tongues	70

Source: Tarr, Shepotylo, and Koudoyarov (2005). See Tarr et al. (2005) for a complete list of products facing tariffs above 30 percent.

inputs but to all sorts of product lines.[57,58] They also disadvantage domestic SMEs as small companies lack the expertise, incentives and political connections to go through the

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[57] While 31.5 percent of imports were duty exempt, only 10 percent of imports were duty-exempt imports used for the production of exports in 2004 (World Bank 2006b).

[58] Studies have shown that duty exemptions are more likely to have a positive welfare effect if the economy is small with high input tariffs, low administrative costs, and uncorrupt tax authorities (Ianchovichina, 2007).

bureaucratic processes of obtaining duty exemption. Finally, an export tax on unprocessed cashmere, intended to encourage production and export of processed cashmere products, has resulted instead in an increase of smuggled cashmere into China, and not to the intended boost in processed cashmere output.[59]

Figure 11. Tax rates and tax administration
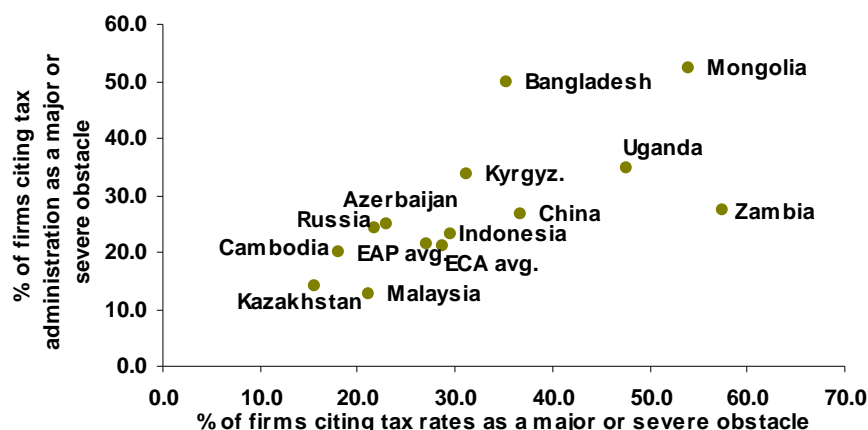
Source: World Bank (2006b).

Table 17. Average no. of days spent a year meeting with tax inspectors

|			
Mongolia	9.0	Europe & Central Asia	2.8
East Asia & Pacific	5.4	Azerbaijan	1.3
Cambodia	7.2	Kazakhstan	3.2
China	12.0	Kyrgyz Republic	3.2
Malaysia	3.8	Russian Federation	2.5

Source: World Bank (2006b).

3.3.5 Is corruption a binding constraint to private sector growth?

According to more than half of the firms that participated in the most recent Productivity and Investment Climate survey (2004) corruption is the number one obstacle to growth and pervades every sphere of business activity. Firms paying bribes to obtain access to electricity, water, and communication infrastructure are respectively 26 percent, 15 percent and 23 percent of all firms surveyed. A quarter of these firms pay bribes for customs clearances of traded goods as the number of documents and steps required for trading across borders as well as the time spent on clearance procedures is much higher in Mongolia than in other countries in the world (Table 18). Unofficial payments, required for obtaining licenses, and the average bribe for different types of licenses were high – around 40 percent of the official fees according to World Bank (2006b).

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[59] The government has plans to abolish this export tax.

Figure 12. Effective tax rates faced by firms
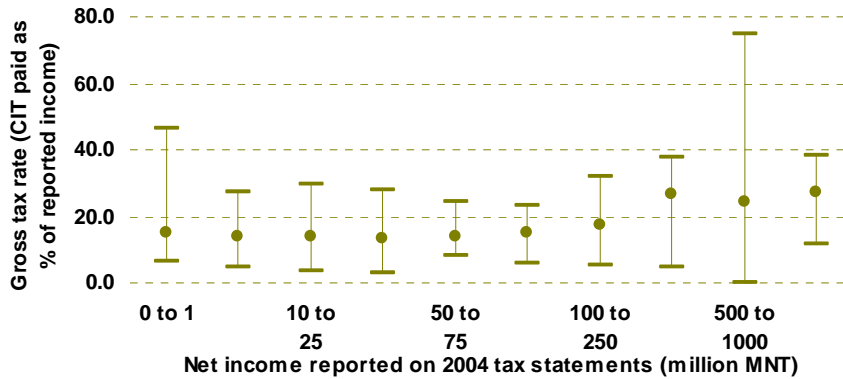
Source: World Bank (2006b).

Corruption in Mongolia has worsened since 2001, according to Transparency International and the World Bank's Governance Indicator, and perceptions of corruption as an obstacle to growth are more widespread in Mongolia than in a number of comparator countries. Mongolia ranks 9th out of 62 countries, for which firm level survey data were available, in terms of its share of firms reporting corruption as a major obstacle to their growth (World Bank 2006b). Mongolia's Country Policy and Institutional Assessment (CPIA) score on transparency, accountability and corruption of the public sector is much lower than that of most countries in East Asia.[60] But Mongolia's rank on the Transparency International Corruption Perception Index is 3, slightly better than that of Fitch's 'B' median of 2.9.

Corruption appears to be a major impediment to large, successful firms in Mongolia, especially those based in the capital city (World Bank 2006b). The process of obtaining permits is nontransparent and many companies have to employ expensive mediators whose job is to negotiate the process of obtaining a permit. Inspectors, most commonly from the Tax Offices of the Government and the State Professional Inspection Agency, visited firms frequently. According to calculations in World Bank (2006b) the total cost of fines, fees and unofficial payments made up over half of the direct financial costs incurred by firms.

More than half of the firms surveyed by the World Bank as part of the 2006 Investment Climate Assessment said that they are expected to make an unofficial payment to government officials, which on average is over 4 percent of the value of a government contract. This average payment is higher than in most of the countries for which such data exist (World Bank 2006b). An even larger share of firms surveyed (64 percent) are concerned with the openness and fairness of the bidding process. There is little understanding of conflict of interest issues, and although the Law on Civil Service asks for income and asset declaration by public officials, the law has not been enforced. In addition, the perception of nearly half of the firms surveyed is that individuals with

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[60] Only Tonga and Lao, PDR have scored lower than Mongolia on this dimension of the CPIA ratings.

political ties have a major or decisive influence on the formulation of laws and regulations governing the business climate (World Bank 2006b).

Table 18. Selected parameters of the business environment

	Documents for export	Time for export	Cost to export	Procedures for enforcing contracts	Cost of enforcing contracts	Time for enforcing contracts
	number	days	(US$ per container)	number	% of debt	Days
Mongolia	11	66	3007	29	17.6	314
Cambodia	8	36	736	31	121	401
Vietnam	6	35	701	37	31.0	295
Azerbaijan	7	69	2275	27	19.8	267
Kazakhstan	14	24	720	37	11.5	183
Kyrgyz republic	..	..	..	44	12.0	140
Uzbekistan	10	44	2550	35	13.5	195
Ghana	5	21	822	29	13.0	552
Uruguay	9	22	552	39	15.9	655
East Asia & Pacific	6.9	23.9	885	31.5	52.7	477
Europe & Central Asia	7.4	29.2	1450	31.5	15.0	409
L. America & Caribbean	7.3	22.2	1068	39.3	23.4	642
Middle East & N. Africa	7.1	27.1	923	41.6	17.7	606
OECD	4.8	10.5	811	22.2	11.2	351
South Asia	8.1	34.4	1236	38.7	26.4	969
Sub-Saharan Africa	8.2	40.0	1561	38.1	42.2	581

Source: Doing Business Data, World Bank (2006a).

The process of acquiring land lease certificates has become a locus of corruption as well. Disputes and lawsuits involving leases are increasing, while disputes over the use of state pastures, especially in the more densely populated areas, are common. Since access to credit depends mainly on collateral in the form of immovable assets (land or buildings), problems with land registration and leases are a constraint to growth in urban and rural areas.

Mongolia's institutions for contract enforcement though weak are improving and are not a binding constraint to growth (Table 18). More than half of the firms surveyed expressed confidence in the ability of the judicial system to enforce their contractual and property rights in business disputes. However, only 10 percent of all firms have had disputes with clients or suppliers that had to be resolved in the judicial system, and of these firms 70 percent indicate that the mechanisms for dispute resolution are a severe impediment to doing business.[61] Crime has been on the rise but does not appear to be a major obstacle to

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[61] Source: 2004 Productivity and Investment Climate Survey.

growth in Mongolia. Less than 1 percent of firms considered it to be one of the three biggest obstacles to growth. Estimates suggest that on average, in 2004 firms' losses due to crime added up to 1.6 percent of sales, higher than the average for East Asia (1 percent).

3.4 Not all constraints a country faces are "binding"

As shown in section 3.3.1, low level of capacity utilization in Mongolian firms implies that infrastructure services other than transport can be improved but at present are not binding constraints to private sector growth in Mongolia. Other constraints to private sector growth that are not binding but need to be addressed in the future in order to sustain growth over the medium term are discussed next.

3.4.1 Mismatch of skills

While a high percentage of high skilled workers are employed in jobs well below their qualifications, over half of the large firms cite a shortage of skilled workers as a reason for not operating at full capacity. A third of the firms surveyed by the World Bank reported vacancies for professionals, and nearly two-fifths report vacancies for educated workers (World Bank 2007). Employers—especially large firms—complain about shortage of certain types of skills such as practical knowledge (e.g., English), technical knowledge (e.g., computers), and managerial, marketing and behavioral skills (work ethics and ability to work in teams).[62] The data on wages of different types of labor support these findings (Table 19).

Table 19. Monthly average wages and salaries in 2006 (thousand tug)

Legislators, senior officials and managers	195.8
Professionals	152.2
Technicians and associate professionals	132.2
Clerks	93.4
Service workers and shop and market sales workers	103.2
Skilled agricultural and fishery workers	74.7
Craft and related trades workers	130.8
Plant and machine operators and assemblers	147.7
Elementary occupations	91.3
Average	128.5

Source: Mongolia National Statistical Office.

Poor quality jobs for skilled workers and underutilization of the skilled labor force are also problems in Mongolia. Although the labor market is relatively flexible,[63] high social security taxes and the fact that these are applicable only to permanent workers, tends to result in poor-quality job opportunities by increasing the share of contract and informal

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[62] According to representatives from the Foreign Investment and Foreign Trade Agency marketing knowledge and skills are critical to export growth.

[63] According to the Doing Business Database, and the Growth Competitiveness Index for 2005 minimum wages and firing costs are low, and temporary contracts are permitted in Mongolia.

jobs. Also, a high percentage of working age people between the ages of 25 and 29 are neither looking for jobs, nor are in school. These idle people, considered discouraged workers, have mostly upper secondary or tertiary education and live in urban areas. The country specific labor market incentive mechanisms on the supply and demand sides combined with evolving population dynamics need to be looked at in addressing this constraint over the long term.

3.4.2 Environmental degradation and natural resource use

The country and many of its people are dependent on natural resources such as grasslands, soils, forests, air and water, yet the quality of these is eroding even as their contributions to the public and shadow economies are increasing. Existing empirical and anecdotal evidence clearly indicates that illegal logging and wildlife trade, the mining sector, particularly artisanal mining, water and air pollution are responsible for the increasing economic costs of environmental degradation.

3.4.3 Macroeconomic environment.

Monetary and fiscal policies have insured macroeconomic stability in recent years and have not been a constraint to growth. In 2005 inflationary pressures accelerated due to a rise in fuel and meat prices and administrative price adjustments in utilities. Given the windfall revenues the Government is currently reaping due to the surge in international mineral prices and the changing structure of the real economy towards a highly concentrated production and export base in mining and livestock sectors, the key challenge will be to maintain macro-stability over the long-term and reduce the economy's vulnerability to international commodity price fluctuations. The harsh weather, that has in the past extinguished a third of the country's total livestock herd in one year (in 2000-01), makes management of this volatility even more difficult.

4. CONCLUDING REMARKS

The analysis presented here, and the "binding constraints" we have arrived at, constitute only a first step in looking at what it will take for Mongolia to continue its current high levels of economic growth. The next step is to look more in depth at country-specific factors and policies that need to be implemented over the short to medium term. In-depth sectoral expertise, country knowledge and policy analysis are needed in order to judge which specific policies to propose, under what scenarios and, of these, which are politically feasible at the time to implement without derailing the momentum for reform in the country. A look at sectoral strategies, results of appropriate stakeholder surveys/political analyses, and micro-level sectoral diagnostics (such as investment climate assessments and public expenditure reviews) will provide an essential supplement in arriving at an informed decision in this regard. Finally, in a rapidly growing economy like Mongolia, or for any growth process for that matter, as one constraint is lifted, another will emerge and become "binding" for economic growth (Hausmann, Rodrik and Pritchett, 2004). Therefore, the growth diagnostic should be revisited in order to ensure that policies in place service the growth objectives of governments.

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