Economic Policy Reform and Competitiveness Project

IMPACT OF TAX REFORMS: 2007-2009

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Main Author:	William B. Gardner II
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Submitted by:	EPRC Project/Chemonics International Inc., Tavan Bogd Plaza, Second Floor, Eronhii Said Amar Street. Sukhbaatar District, Ulaanbaatar, Mongolia
Telephone and fax:	(976-11) 32 13 75 Fax: (976-11) 32 78 25
Contact:	Fernando Bertoli, Chief of Party
E-mail address:	fbertoli@eprc-chemonics.biz

ABBREVIATIONS AND ACRONYMS

CGE	Computable General Equilibrium
CIT	Corporate Income Tax
EPRC	Economic Policy Reform and Competitiveness project
GDT	General Department of Taxation
GDP	Gross Domestic Product
IMF	International Monetary Fund
METR	Marginal Effective Tax Rate
MNT	Mongolian tugriks
MoF	Ministry of Finance
PIT	Personal Income Tax
SGH	State Great Hural
SMEs	Small and Medium Enterprises
TT	Tax Form
USAID	United States Agency for International Development
VAT	Value Added Tax

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EXECUTIVE SUMMARY

This report examines the impacts of the new tax laws adopted in 2006 that became effective 1 January 2007 as well regulations and improvements that the General Department of Taxation (GDT) undertook with support from the Economic Policy Reform and Competitiveness project (EPRC) funded by the United States Agency for International Development (USAID). The analysis covers the period 2007-2009, a three-year period that included both economic expansion and an economic downturn. The analysis examines aggregate personal income tax, corporate income tax, and value-added tax returns on file through the end of 2009. Corporate income tax returns were examined as filed and after adjustments to exclude the impact of the windfall profits tax that was introduced in 2006.

Background

EPRC/USAID provided the following support: technical analysis, formulation of objectives, public information and consensus building, drafting model laws, facilitation of political consensus for the laws, drafting of regulations, training of tax inspectors, development of tax brochures for the public, and training on customer service. Specific activities included, *inter alia*, the following:

1. Technical analysis of the existing tax system and formulation of alternatives carried out in 2004.
2. Formulation and official adoption of objectives of the tax reform in April 2005, summarized in “Communications Strategy to Support Tax Relief in Mongolia.”
3. Public information and awareness raising of the need for tax reform in April 2005 that led to the production of fourteen informational newspaper articles from July to September 2005.
4. Public consensus building around objectives of the tax reform through broadcast of three live *Open Talks* television programs on taxes, from October through December 2005.
5. Technical support to MoF, Parliament, and GDT in drafting laws, developing a Computable General Equilibrium (CGE) tax impacts model, and examining the fiscal impact of alternative tax measures, beginning in February 2005.
6. Facilitation of Parliament consensus on tax reform measures through five Parliamentary Tax Working Group retreats held from October through December 2005.
7. Tax administration support and implementation of tax reform measures, including:

   - Two live, nationally broadcast *Open Talks* television programs on the new tax laws involving business and government, held in November 2006
   - Production of brochure, “Mongolian taxes at a glance,” to inform the public about the new laws. Training of 350 tax inspectors on International Accounting Standards and IFRS.
   - Redesign of tax return forms, regulations, and taxpayers’ instructions for the new tax laws summarized in three brochures: “Personal Income Tax: New law, less tax”, “Economic Entity Income Tax: New law, less tax”, and “Value-Added Tax: New law, less tax” in December 2006.
   - National workshop for tax inspectors on the new tax forms and regulations in April 2007.
   - Redesign and launching of new GDT website in September 2007.
   - National workshops on customer service training for tax inspectors, ongoing from October 2009.

- Publication of "Value-Added Tax (VAT) for Small and Medium Enterprises (SMEs)" brochure in March 2010.

Officially adopted in early 2005, the objectives of the tax reform were to:

1. Increase country competitiveness by lowering the tax burden on businesses, enabling job creation.
2. Expand the Mongolian economy by reducing the tax burden and labor costs on wage earners.
3. Simplify tax administration procedures to reduce compliance costs and arbitrariness, reducing the size of the shadow economy and expanding the tax base.
4. Support domestic investors by removing discriminatory tax provisions and adjusting taxes to favor domestic production.
5. Shift the tax burden from investment/production towards consumption/ownership.
6. Preserve a sound fiscal environment.

EPRC/USAID assistance with overhauling tax legislation focused on the Personal Income Tax (PIT), Corporate Income Tax (CIT), and Value-Added Tax (VAT) laws that were passed in June 2006 and went into effect on 1 January 2007. The new PIT law introduced the following changes:

- Unified the tax rate on taxable personal income at 10%, replacing the three-tiered rate of 10%, 20%, and 30%.
- Raised the tax credit on taxable personal income from MNT 48,000 a year to MNT 84,000, statutorily exempting from taxes those below the poverty line, around 30% of the population, and at least an additional one-third of low income citizens.
- Reduced the number of tax rates from 8 to 4, reducing the administrative burden on taxpayers.
- Allowed sole proprietorship operators to deduct more legitimate costs of doing business.
- Limited opportunities for tax evasion by including fringe benefits in taxable income and by empowering the GDT to restate related party transactions.
- Brought the law closer to international best practices.

The new CIT law introduced the following changes:

- The tax schedules were adjusted so as to lower CIT liabilities across the board. Under the prior schedule, taxpayers faced a 15% rate on the first MNT 100 million; a 30% rate applied to taxable income in excess of that threshold. The new law taxes the first MNT 3 billion at 10%, and imposes a 25% rate on taxable income above that level. The tax is now essentially a "flat tax" with a 10% rate for 99% of businesses.
- The list of deductible expenses was expanded to include more legitimate costs of doing business; some restrictions on deductions were also added.
- Losses can now be used to offset future taxable income, providing more equitable treatment for new and temporarily troubled businesses.
- The forms of income that are exempt from tax were reduced, leveling the playing field for foreign and domestic businesses.
- New foreign tax credits were introduced, as were credits for investment, providing a stimulus for business investment.

The new VAT provided the following:

- Reduction of the VAT rate from 15% to 10%.
- Expansion of the tax base to include a greater range of goods, works, and services.

- Modification of the set of goods, works, and services that are either exempt from VAT or which are taxed under the VAT at a zero rate.

Findings

The impact of the new laws, revised regulations, public and taxpayers' education, and training of tax inspectors and collectors on returns from PIT, CIT and VAT is measurably distinct from the impact of underlying economic growth.

PIT revenues for the post-reform period indicate that there was a discernible impact on "reducing the size of the shadow economy and expanding the tax base," a key objective of the reform. Analysis of PIT shows increased revenues and an expanded tax base (more returns from self-employed individuals and an increased number of withholdings from those employed). Tax reform induced changes had a distinct and measurable impact on the increase in PIT receipts through withholdings. More specifically:

- The number of employees with PIT tax withheld through payroll jumped by 45%, to 512,205 during 2007 relative to 2006 and has steadily increased to 625,011 in 2009 indicating increased formalization of business payrolls and an expansion of the tax base.
- The number of tax returns from the self-employed expanded by 48% between 2006 and 2009 to 72,928 filers, indicating increased formalization of the economy.
- After a 10% dip in revenues collected in 2007 relative to 2006, PIT revenue collected from withholdings through payroll was up 78% in 2009 to MNT 112,893 million, relative to 2006.
- PIT collected from the self employed more than tripled during 2007 relative to 2006; in 2009, PIT collected from the self-employed reached MNT 6,583 million, more than double the 2006 level.
- Tax reform induced changes accounted for 61% of the increase in PIT receipts through withholdings, with underlying economic growth accounting for the remaining 39%.

Analysis of CIT impacts shows increased revenues linked to an expansion of the tax base (more returns) and greater reported gross income of companies. More specifically:

- The number of CIT returns with tax due increased by 25% in 2009, to 20,563 taxpayers, relative to 2006.
- Corporate gross income reported increased by 43% in 2007 from the previous year, to MNT 6,845,268.6 million. The tax reform is responsible for 30% of this increase, while the remaining 70% is accounted for by normal economic growth.
- CIT revenues were 16% higher in 2009, MNT 225,068.5 million, than in 2006.
- Distinct tax reform direct and indirect effects accounted for 42% of the increase in corporate net taxable income, with underlying economic growth accounting for the remainder of the change.

Analysis of VAT returns shows that domestic VAT revenues increased significantly and the domestic tax base almost doubled. The VAT imports tax base expanded by 38%, which rendered the reduction in rates, from 15 to 10%, revenue neutral. More specific effects of the VAT reforms include:

- The number of domestic VAT returns almost doubled in 2009 relative to 2006 to 11,820 returns, indicating more domestic businesses chose to register and formalize their status.
- Revenues from domestic VAT returns in 2009 increased 2.5 times, to MNT 50,064 million.
- Distinct tax reform direct and indirect effects, including voluntary compliance, accounted for 44% of the expansion of the domestic VAT base growth whereas

statutory changes in the VAT law such as reductions in exemptions and zero-rating accounted for an additional 7% of the change. Underlying economic growth accounted for the remaining 49% of the change.

- Contrary to expectations of a sharp decline, VAT collected from imports went down less than one percent in 2007, to MNT 210,660.7 million, relative to 2006 as the legal expansion of VAT base and reduction of exemptions increased the tax base by 38%. Collections of VAT on imports increased to MNT 300,830.1 million in 2008 but declined to MNT 251,123.9 million in 2009 as taxable imports declined by over 16%.
- 43% of the change in the VAT on imports base growth from 2007 to 2009 relative to 2006 was due to expansion of the legal base brought about by the tax reform, with an additional 10% attributed to the direct and indirect effects of the tax reform; the remaining 47% of the change was due to underlying economic growth.

Similar analysis of the impact of the tax reform on the expansion of the taxable VAT base at the border shows that economic activity accounted for 47% of the increase while VAT legal base changes contributed 43% and other economic effects of the VAT tax reform accounted for the remaining 10%.

Recommendations

While the trends observed to date indicate that the reform program has produced a stable revenue stream, this does not guarantee that the trends will continue without constant effort on the part of the GDT. Revenue gains have accrued by bringing more taxpayers in to the tax net; efforts must continue to identify those who do not voluntarily participate or there will be a powerful incentive for those recently added to the tax rolls to slip once again into the shadows. The pressure to do so is always intensified during periods of economic distress, such as the recent situation in Mongolia.

It is clear that there are still issues with the shadow economy; the relative revenue productivity of the PIT, CIT, and VAT all remain fairly low in comparison to world standards. The GDT should dedicate itself to measuring its performance not only by how much revenue it collects relative to previous periods, but also how much it collects relative to what could potentially be collected. This can only be ascertained by making increased use of external data sources to identify potential collection levels by sector and using that information in planning how to allocate its enforcement resources.

External data sources can help answer significant questions such as:

- How effective have the reforms been in reducing the impact of the shadow economy on collections?
- How large is the tax gap, i.e., how do overall tax collections in the post reform environment compare to potential collections?
- Are there differences in the relative size of the tax gap across various economic sectors?
- How much do the exceptions/preferences in the tax laws reduce collections?
- How does the tax system affect investment across the various economic sectors?

All of these questions can be addressed by a careful examination of available data, including:

- The Input-Output tables from 2005.
- The Household Socio-Economic Survey from 2007 – 2008.
- The Household, Unincorporated Enterprises, and Informal Sector Survey from 2007 – 2008.

Recommendations for further analysis of the impact of the tax reform measures and improvement of the tax system are:

Recommendation 1: Perform a "Tax Gap Analysis" to estimate potential versus actual tax collections of VAT, CIT, and PIT.
This would allow measuring the impact of the shadow economy on tax collections and provide a benchmark against which to gauge actual collections.

Recommendation 2: Estimation of Marginal effective Tax Rates (METRs).
Estimation of METRs would provide measures of the combined effects of the VAT, CIT, and PIT on investment by economic sector. Sectoral METRs are the best set of indicators of the impact of a tax system on investment and can be used to evaluate competitiveness internationally as well as across sectors.

Recommendation 3: Estimation of the fiscal cost of major exemptions and preferences.
Collections for any tax can fall short of the theoretical maximum levels for reasons other than the existence of a shadow economy. Tax laws contain preferences, exceptions, and exemptions which reduce revenues. As these deviations from the "normal" tax structure impact the budget just as do direct expenditures, they are commonly referred to as "Tax Expenditures." Tax expenditure amounts should be monitored annually in order to ensure that the costs of the foregone revenue are proportionate to the benefits conferred.

SECTION I: OVERVIEW

This report examines the impacts of the new tax laws adopted in 2006 that became effective 1 January 2007 as well regulations and improvements that the General Department of Taxation (GDT) undertook with support from the Economic Policy Reform and Competitiveness project (EPRC). The analysis covers the period from 2007 to 2009, a three-year period that included both economic expansion and an economic downturn. The analysis examines aggregate personal income tax, corporate income tax, and value-added tax returns on file through the end of 2009. Corporate income tax returns were examined as filed and after adjustments to exclude the impact of the windfall profits tax that was introduced in 2006.

Developed during the first quarter of 2005 and formally adopted during the second quarter, the official objectives of the reform were to:

1. Increase country competitiveness by lowering the tax burden on businesses, enabling job creation.
2. Expand the Mongolian economy by reducing the tax burden and labor costs on wage earners.
3. Simplify tax administration procedures to reduce compliance costs and arbitrariness, reducing the size of the shadow economy and expanding the tax base.
4. Support domestic investors by removing discriminatory tax provisions and adjusting taxes to favor domestic production.
5. Shift the tax burden from investment/production towards consumption/ownership.
6. Preserve a sound fiscal environment.

After months of intense work and public debate, the State Great Hural (SGH)—Parliament—passed an initial package of four tax laws in June 2006:

- A new Personal Income Tax (PIT)
- A new Corporate Income Tax (CIT)
- A revised Value-Added Tax (VAT)
- Revised Excise Tax Laws

With the exception of the revised excise taxes, the package came into effect on 1 January 2007 in response to the government commitment to implement “tax policy reforms that will reduce the tax burden on labor and businesses, encourage private sector growth, and strengthen Mongolia’s competitiveness in the global market.”

A. Basic methodology

Analyzing the revenue effects of a broadly-based tax reform program is a relatively complex undertaking. While we can easily compare revenues collected from a given tax in the period after a reform program is enacted to the period prior to the reform, in order to analyze the effects of the reform we must isolate the effects from all other factors influencing receipts.

Tax revenues change over time for several reasons:

- Changes in the rate of growth or the composition of overall economic activity;
- Changes in tax rates;
- Expansion or contraction in the legal definition of the tax base; and
- Differences in tax administration practice.

Receipts under the Mongolian tax reform program have been impacted by all of these forces. In this study, we measure the relative contribution of each factor by using variants of the following approach for each year subsequent to the implementation of the tax reform program, for each major tax type:

- We first identify the tax receipts for the tax of interest to find the post-reform baseline level of receipts.
- Next, we determine the size and composition of the tax base, consistent with the post-reform baseline.
- We then calculate the revenue effect of any tax rate change with reference to the post-reform baseline. In essence, we are assuming that the effects of rate changes are "stacked last", and take all other changes into account. To preserve consistency, this requires that all other effects be evaluated at the pre-reform tax rates.
- The next step is to determine the effects of normal economic growth on the level of receipts. This is done by developing estimates of the receipts that would have been expected to accrue to the Government had the reform program not been enacted – what is usually referred to as the pre-reform baseline - and had macroeconomic conditions been exactly as they were post-reform. Growth in these estimates over the levels in the last pre-reform period can then be attributed to changes in economic conditions, and thus should not be attributed to the reform program itself.
- Changes in the legal definition of the tax base generally produce shifts in the relationships between base components and overall receipts. By holding appropriate tax base ratios constant at pre-reform levels, we can estimate the impact of expansions or contraction in the tax base.
- Finally, any remaining changes in revenue – those not attributable to normal economic growth, changes in tax rates, or modifications of the legally defined tax base – can be attributed to changes in the tax administration environment and/or changes in taxpayer behavior. Improved tax administration will, of course, lead to a higher level of revenue over time while decreases in administrative effectiveness will lead to lower revenues. Changes in taxpayer behavior may similarly have either a positive or negative effect. When the reform is designed to either lessen the cost of compliance with the tax law (as might be associated with a rate reduction), or increase the cost of non-compliance (e.g. by imposing higher penalties and interest for non-compliance), then we expect a positive impact on revenues.

B. Measuring the overall success of reforms

Performing the analysis described above can provide us with a consistent set of estimates with which to evaluate the revenue effects of the major tax reform components for each year. An analysis of the post-reform revenue performance of any of the affected taxes would directly shed light on the extent to which the reforms fulfilled objective 6, "Preserve a sound fiscal environment." By itself, however, it would tell us little about the remaining objectives.

To evaluate the non-revenue objectives of the reform program, we need to incorporate additional measures that gauge the effectiveness of tax administration, the penetration into the shadow economy, and the combined effects of the reforms on the business environment.

The effectiveness of tax administration systems is difficult to measure using only tax system data. Tax agencies are charged with collecting all taxes that are legally due, but the tax system only captures information from those that are inside the tax net. The tax liability of those who are unknown to the tax system, those in the shadow economy, is missing.

B1. Potential collections and tax productivity index

One approach that we use is to calculate a tax productivity index for each of the major taxes and monitor changes in the index levels over time. For a given tax, the index is computed by first approximating the size of the total tax base through the use of a known macroeconomic indicator, then applying the relevant tax rates to gauge potential tax collections. For most taxes, the macroeconomic indicator of choice is GDP, the broadest measure of an economy's performance.

The index is calculated by first computing the ratio of the total collections from a tax to GDP, then dividing the rest by the average tax rate. For the VAT, we would take total VAT collections, divide by GDP, and then divide again by either 15% (for a pre-reform period) or 10% (post-reform.) In essence, GDP serves as a proxy for the VAT base (i.e. the VAT is applied at the standard rate to all value added) and the ratio of collections to GDP should be equal to the VAT rate. In practice, of course, some goods are exempted and others are zero rated, and not all transactions are subject to VAT due to either the vendor being below the registration threshold or due to tax evasion. Thus, the ratio will always be below the VAT rate. We divide the ratio by the VAT rate to see how close we are to collecting everything that could be potentially taxed under an all-encompassing VAT system. The extent that the resulting index falls below 1.00 relates to issues on exemptions, zero-ratings, or administrative efficiency. Constructing these ratios also enables a useful comparison of relative performance of alternative tax systems with different tax rates and bases across countries.

In an ideal world, one should wherever possible utilize multiple methods to approximate the revenue productivity index of a given tax. Instead of GDP, for example, we might use estimates of household consumption derived from survey data to approximate the potential VAT base. In many ways, this would be much closer to the actual VAT base; however, these data were not available at this time. We strongly suggest that it be included in the future work plans of the GDT.

B2. Marginal effective tax rates

It is also important to evaluate the economic development incentives in the tax reform measures. Not enough time has yet elapsed to evaluate the long term impact of the reform plan's capital incentives on economic growth and increases in investment in the Mongolian economy, but it is possible to investigate how the reforms have impacted key parameters that investors consider when making investment decisions.

A commonly used tool for this purpose is Marginal Effective Tax Rate (METR) analysis. Many economists refer to the METR as 'the only rate that matters!' The METR is a comprehensive measure of the tax that applies to an incremental dollar of income from new investment. It reflects the combined effect of all applicable corporate income taxes, rules related to depreciation, investment tax credits, and capital and sales taxes. The higher the METR, the lower the level of investment that will take place in the economy. By looking at changes in the METRs over time, one can determine a reform program's impact competitiveness in different sectors of the economy, as well as how it impacts the overall level of taxation within the business sector.

Calculating the METR requires detailed data by sector. Much of this data can be derived from a full set of commodity-level Input-Output tables for an economy, which is required to approximate both the mix of capital asset types that are required for business in a given economic sector as well as to determine the typical amounts of VAT that a firm typically pays but cannot claim as a credit against VAT it collects on its sales. The necessary data exists for Mongolia, but has not yet been made available in commodity-level detail. Without this data, reliable (or meaningful) METR estimates cannot be developed; therefore estimates have not been included in this report.

B3. Number of taxpayers

The numbers of taxpayers submitting declarations for each tax type is also an important indicator of tax reform success or failure. Reduction in the size of the shadow economy should be reflected by both increases in the tax base (as taxpayers more fully disclose their activities to the tax authorities) and in the number of taxpayers (movement from the shadow should be accompanied by having more taxpayers registered and participating in the legal economy).

SECTION II: THE EFFECTS OF THE NEW CORPORATE INCOME TAX

A. Introduction

The Mongolian Parliament enacted new Corporate Income Tax (CIT) legislation in 2006 that became effective 1 January 2007. On balance, the new law represents substantial movement towards international best practice for taxing business income. The major changes in the CIT law can be summarized as follows:

1. The tax schedules were adjusted so as to lower CIT liabilities across the board. Under the prior schedule, taxpayers faced a 15% rate on the first MNT 100 million and a 30% rate applied to taxable income in excess of that threshold. The new law taxes the first MNT 3 billion at 10%, and imposes a 25% rate on taxable income above that level. The tax is now essentially a “flat tax” with a 10% rate for 99% of businesses.
2. The list of deductible expenses was expanded to include more legitimate costs of doing business; some restrictions on deductions were also added.
3. Losses can now be used to offset future taxable income, providing more equitable treatment for new and temporarily troubled businesses.
4. The forms of income that are exempt from tax were reduced, leveling the playing field for foreign and domestic businesses.
5. New foreign tax credits and credits for investment were introduced, providing a stimulus for business investment.

The CIT basic tax revenue increased from MNT 195 billion in 2006 to MNT 219 billion in 2007, the first year of the tax reform. Revenues fell in 2008 to MNT 179 billion, and in 2009 rose again to MNT 225 billion. The principle objective of this section of the report is to decompose these changes in revenues in order to assess the relative impact of the reforms on CIT revenues from 2007 to 2009.

It must be noted that the reported CIT basic tax revenue includes the effects of the deductibility of payments of Windfall Profits Tax in the determination of income subject to tax under the CIT. The windfall profit tax is scheduled to terminate at the end of 2010; as such we will also perform an analysis of the impact of that termination on the revenue stream.

B. Methodology

CIT liability is generally calculated via the following formula:

> *CIT tax liability* = (Total sales income - Total exempt income - Total deductible expenses + Adjustments to taxable income) * CIT rate – Total tax credits

Each of these concepts is well defined on Form TT-02 as generated by the GDT. For this analysis, the GDT generated a special digital file in which the population of CIT returns was split to include separate tabulations for those taxpayers with a positive CIT liability and those taxpayers who did not have a CIT liability. This distinction is important for analytic purposes, as it is only the sales, deductions, and credits of taxpaying firms that matter for receipts. Attempts to correlate macroeconomic indicators to aggregate totals for all taxpayers can, and often does, lead to misleading conclusions about the nature of those relationships within the context of tax liability determination.

C. Analysis

C1. Numbers of taxpayers:

As summarized below, the new law broadened the tax base by expanding the number of taxpayers filing returns. The number of returns with tax due expanded at an approximate rate of one thousand per year between 2004 and 2006, but between 2006 and 2007, the number of returns increased by 1,588 (10%), and by an additional 1,959 returns (11%) in 2008. The economic slowdown in 2009 reduced the rate of growth in 2009 to an increase of 498 returns (2.5%).

Year	Returns with tax due
2004	14,313
2005	15,167
2006	16,514
2007	18,102
2008	20,061
2009	20,563

C2. Total sales income:

This is the broadest measure of income reported to the GDT and income growth since 2006 appears to reflect a widening of the CIT base under the new law. Total sales income is generally larger than GDP; total sales conceptually should be a multiple of the total value added measured by GDP. In 2006, total sales income reported by tax-paying firms was 129% of GDP. Over the period 2007 to 2009, however, the ratio increased to an average of 148%. If the ratio had remained constant at the 2006 level throughout 2007 to 2009, total sales income for the period would have been only MNT 21,470 billion. This suggests that the new law and improved tax administration measures enlarged the reported total sales income on returns by MNT 3,063 billion or by approximately 14%.

C3. Exempt income:

The new law shortened the list of CIT exemptions to three items: government bond interest, oil income for non-resident taxpayers, and cooperative income for intermediary services. In response to the elimination of several other exemptions, total exempt income declined from MNT 8 billion in 2006 to MNT 7 billion in 2007, MNT 1 billion in 2008, and MNT 4 billion in 2009.

Deductions for expenses

The new law both approximately doubled the list of deductible expenses and also placed more limitations on these deductions. Based on tax return data, it appears that the expansion of the set of expenses eligible for deduction outweighed the limitations enacted on deductions. As shown below, the Deductible expense/Total sales income ratio was 81% in 2006, but averaged 87% from 2007 to 2009. This suggests that the gross impact of changes in the CIT law served to boost deductions for expenses by a total of MNT 1,474 over the post-tax reform period.

It must be noted that the deductibility of the windfall profit tax accounts for 68% of the increase in deductions from 2007 to 2009 over what would have been expected had the relationships present in 2006 remained in effect. The Mongolian Parliament enacted an excess profits tax in 2006. Although separate from the CIT, the amount of this tax payable to the government appears in Form TT-02 for 2007 (line 42) as a deductible expense. This implies that without the windfall profit tax, the legislated changes would have been estimated to increase deductions by MNT 467 billion for 2007 to 2009.

Adjustments to taxable income

For the most part, these adjustments reflect limitations placed on the deductibility of expenses. In other words, the amount of expenses that were disallowed would be added back to income. Thus, adjustments usually increase taxable income. Under the previous law, the main adjustments were excess advertising expenses and excess property management expenses. The new law contained several other adjustments such as excess insurance premiums, fines and penalties, excess per diem expenses, loan repayments, and expenses associated with exempt income. Consequently, we expected that adjustments would rise under the new law. Reported adjustments rose from MNT 74 billion in 2006 to MNT 85 billion in 2007 and MNT 95 billion in 2008 but declined to MNT 78 billion in 2009. It is significant to note, however, that the relative value of adjustments to total sales income for profitable firms declined from 1.5% in 2006 to 1.1% over 2007 to 2009. Had the ratio observed for 2006 remained constant, total adjustments – and taxable income - would have been MNT 121 billion greater.

Taxable income

All of the preceding changes combine to alter taxable income, the CIT base to which the tax rate is applied. Taxable income increased from MNT 983 billion in 2006 to MNT 1,203 billion in 2007, decreased to MNT 1,049 billion in 2008, and again increased to MNT 1,213 billion in 2009. As a percentage of Total sales income, taxable income fell from 21% in 2006 to an average of 14% over 2007 to 2009. If the deductions for payment of windfall profit tax are eliminated, taxable income averaged 18% of total sales income from 2007 to 2009. Thus, the evidence suggests that the net impact of all of the cumulative changes in exemptions, deductions, and adjustments was to reduce taxable income. If the 2006 Taxable income/Total sales income had remained constant, taxable income would have been MNT 1,388 or 15% larger. This differential would have been reduced to a reduction of taxable income of MNT 558 billion had the windfall profit tax not been in effect.

CIT basic rates

As noted above, tax rates were also reduced in the new law and the higher rate was confined to taxable incomes above MNT 3 billion. The average tax rate imposed on taxable income before credits under the previous law was approximately 29% in 2006. Under the new law, the average tax rate fell to a level of approximately 21% for the entire 2007 to 2009 period. If the previous average rate continued from 2007 to 2009 with the actual reported taxable income, revenue before credits would have been MNT 989 billion over that period instead of the actual MNT 682 billion. It is important to note that the lower tax rate may have contributed to the growth in Total sales income. Modeling potential dynamic effects of such tax changes is not within the scope of this analysis.

CIT credits

Under the old CIT law, there were only two tax credits: one on income from certain agricultural products and one for employment of the disabled. The new law added a 10% investment tax credit and a foreign tax credit. Despite the increase in the number of items eligible for tax credits, however, credits declined between 2006 and 2007 from MNT 86 billion to MNT 29 billion. This trend continued unabated, and credits totaled only MNT 6 billion in 2008 and MNT 3 billion in 2009.

Relative to CIT imposed, credits were about 31% in 2006, 12% in 2007, 3% in 2008, and 2% in 2009. Thus, under the old law, credits had cut the tax revenue substantially but from 2007 to 2009 the impact of credits on tax revenue was itself reduced by approximately 80% relative to their impact on revenue in 2006.

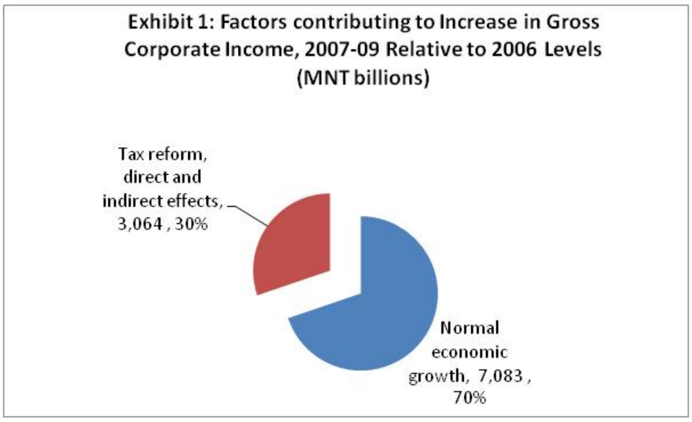
Total tax due at the basic rate:

Total revenue from the basic CIT rate has fluctuated within a comparatively narrow range in recent years. Revenues from this source were MNT 195 billion in 2006, the last pre-reform year, and increased to MNT 219 billion in 2007. Revenues fell in 2008 to MNT 179 billion, followed by an increase to MNT 225 billion in 2009. The absence of a discernible pattern resulted from the interaction of the differing trends present in the determinants of the components of CIT revenue, which in turn were heavily impacted by the tax reform program.

Relative to taxable income, however, the revenue was reduced because of the cuts in tax rates and credits. As a percent of taxable income, tax after credits at the basic rates fell from a pre-reform level in 2006 of 20% to an average of 18% over 2007 to 2009.

D. Summary of sources of revenue growth from 2007 to 2009

If the CIT, the economy, and all other factors influencing collections remained unchanged at 2006 levels, we would estimate that collections from this source from 2007 to 2009 would have been approximately MNT 584 billion, approximately MNT 39 billion less that was actually received.



Analyzing the impact of the tax reform on CIT revenues in the context of increased pace of economic activity requires examining what was behind the increase in CIT collections. This is best done by looking at the changes in gross income, deductions, and taxable income separately as tax reform and economic growth have different impacts on each measure.

Exhibit 1 illustrates the sources of change for total corporate gross income. From 2007 to 2009, the reported amount represented an increase of MNT 10,147 billion over what would have been reported if each year had been identical to 2006. Of this increase, 70% was due to normal economic growth and 30% was due to direct and indirect effects of tax reform, including changes in tax administration.

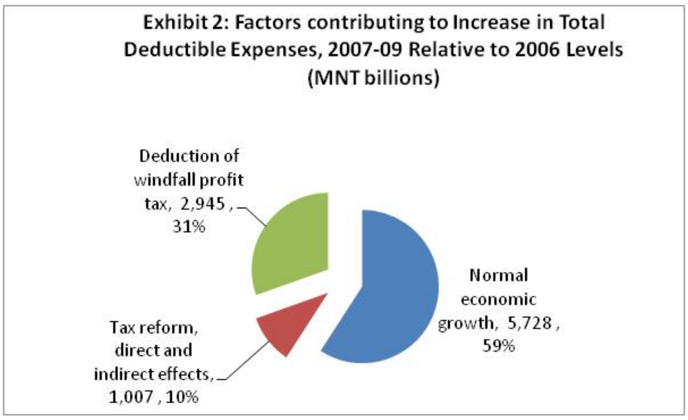


Exhibit 2 shows the results of a breakdown of the components of change for deductible expenses. Total deductible expenses for the period increased by MNT 9,680 billion over what would have been deducted had everything remained constant at 2006 levels. Baseline economic growth is again the major factor, accounting for MNT 5,728 billion of the increase while direct and indirect effects of tax reform account for MNT 2,945 billion. The remainder, MNT 1,007 billion, is attributed to increased deductions due to the enactment of the windfall profit tax. Absent this tax, deductible expenses would have been MNT 1,007 billion less over the period. These results suggest that the tax reform achieved the objective of bringing Mongolian tax law into closer conformity with IFRS and international best practice by allowing corporations to more fully deduct legitimate business expenses.

Exhibit 3: Factors contributing to Increase in Corporate Net Taxable Income, 2007-09 Relative to 2006 Levels (MNT billions)

Exhibit 3 provides the breakdown of the sources of change for total taxable income, and thus the most direct basis for assessing the combined effects on tax liability. It must be noted that total taxable income for 2007 to 2009 was calculated to be MNT 498 billion greater than what would have been received had 2006 levels been maintained throughout the period. Baseline economic growth would have increased total taxable income by MNT 1,452 billion, while tax reform direct and indirect effects would have added another MNT 52 billion. The difference, a reduction of MNT 1,007 billion, is again due to the deductibility of the windfall profit tax. Without that tax, total taxable income would have shown an increase of MNT 1,504 billion and the contribution of tax reform increased to MNT 1,059 billion, the amounts actually shown on the chart. Using non-windfall profit adjusted CIT figures understates the contribution of the tax reform program to the CIT tax base.

Note on the Windfall Profit Tax

As previously stated, the windfall profit tax has been scheduled to terminate at the end of 2010. From 2007 to 2009, total windfall profit tax deductions from corporate tax returns amounted to MNT 1,006 billion. Assuming an average marginal tax rate of 24%, this implies that corporate tax collections were reduced by MNT 241 billion over that period, making the net contribution of the windfall profit tax MNT 765 billion. Historically, collections from the windfall profit tax have ranged from MNT 280 – 400 billion per year, dependent upon relevant commodity prices. Assuming a continued recovery in world markets, it is reasonable to expect that such collections would have amounted to approximately MNT 400 billion a year in the near future. Thus, after taking into account the reduction in CIT revenues, the net reduction in revenues available to the Government of Mongolia after this tax is terminated will be approximately MNT 304 billion annually.

E. CIT Revenue Productivity Index

The 2006 CIT revenue productivity index stood at approximately 0.19, above the world average and comparable to levels in East Asian countries. Since tax reform, the indicator increased to 0.21 in 2007 and declined slightly to 0.18 on average from 2007 to 2009. This decline can largely be attributed to the growth in deductions and exemptions relative to GNP over that period.

Exhibit 4: CIT ANALYTICAL TABLE FOR FULL-YEARS 2003-2009
(Thousands of MNT)

Indicators	2006	2007	2008	2009	2007-09
Total sales income	4,795,623,209	6,845,268,643	9,214,582,201	8,473,930,937	24,533,781,781
Total exempt income	8,249,154	7,039,649	1,281,199	3,675,342	11,996,190
Total deductible expenses	3,878,245,269	5,720,123,987	8,259,350,148	7,335,295,655	21,314,769,791
Adjustment to taxable income	73,982,318	84,605,366	95,244,547	78,128,674	257,978,588
Taxable income before loss carry-forward	983,111,104	1,202,710,373	1,049,195,402	1,213,088,614	3,464,994,388
Loss carry-forward	-	34,294	1,989,312	16,050,143	18,073,750
Taxable income	983,111,104	1,202,676,079	1,047,206,089	1,197,038,470	3,446,920,638
Tax due before credits	280,651,460	247,911,298	185,511,961	228,543,727	661,966,985
Total tax credit	85,971,117	29,295,236	6,290,067	3,475,270	39,060,573
Total tax due at the basic rate	194,680,343	218,616,062	179,221,893	225,068,457	622,906,412
GDP	3,715	4,558	6,020	6,054	16,632
GDP Growth Rate	-	22.7%	32.1%	0.6%	
Total sale income / GDP	129%	150%	153%	140%	148%
Total sales income 2006 ratio	4,795,623,209	5,883,835,959	7,771,104,096	7,814,994,053	21,469,934,108
Increase over baseline	-	961,432,684	1,443,478,105	658,936,884	3,063,847,673
Deductible expenses / Total sales income	81%	84%	90%	87%	87%
Increase in deductible expenses	0	184,319,865	807,469,909	482,383,921	1,474,173,695
Less: Windfall profit tax deductions	0				1,006,686,224

		398,522,050	392,544,066	215,620,107	
Equals_ Combined effect	0	(214,202,185)	414,925,843	266,763,813	467,487,471
Adjustments/Total sales income	1.5%	1.2%	1.0%	0.9%	1.1%
Adjustments using 2006 ratio to total sales income	73,982,318	105,602,299	142,153,817	130,727,754	378,483,870
Estimated change in adjustments	-	(20,996,933)	(46,909,270)	(52,599,079)	(120,505,283)
Taxable income/Total sales income	21%	18%	11%	14%	14%
Ratio adjusted for windfall profit tax	21%	23%	16%	17%	18%
Taxable income with 2006 ratio	983,111,104	1,403,291,985	1,889,005,388	1,737,170,590	5,029,467,963
Change in taxable income	-	(200,581,613)	(839,809,987)	(524,081,976)	(1,564,473,575)
Taxable income with 2006 ratio, no windfall tax	983,111,104	1,403,291,985	1,889,005,388	1,737,170,590	5,029,467,963
Change in taxable income	-	197,940,438	(447,265,920)	(308,461,869)	(557,787,351)
Ratio of tax due before credits / Taxable income	29%	21%	18%	19%	19%
Tax due before credits at 2006 ratio	280,651,460	343,341,074	299,516,728	346,303,779	989,161,581
Credits / Tax before credits	31%	12%	3%	2%	6%
Tax after credits / Taxable income	20%	18%	17%	19%	18%

Exhibit 5: ANALYSIS OF CIT SHARES
(thousands of MNT)

Summary of Revenue Sources:	2006	2007	2008	2009	2007-09
Base level of Total sales income, 2006 level	4,795,623,209	4,795,623,209	4,795,623,209	4,795,623,209	14,386,869,627
Total sales income due to baseline economic growth	-	1,088,212,750	2,975,480,887	3,019,370,844	7,083,064,481
Total sales income due to other economic effects of tax reform	-	961,432,684	1,443,478,105	658,936,884	3,063,847,673
Combined, Total sales income	4,795,623,209	6,845,268,643	9,214,582,201	8,473,930,937	24,533,781,781
Base level of Exempt income, 2006 level	8,249,154	8,249,154	8,249,154	8,249,154	24,747,462
Exempt income due to baseline economic growth	-	1,871,881	5,118,250	5,193,747	12,183,878
Exempt income due to net restrictions in tax reform program	-	(3,081,385)	(12,086,206)	(9,767,559)	(24,935,151)
Total, Exempt income	8,249,154	7,039,649	1,281,199	3,675,342	11,996,190
Base level of Deductible expenses, 2006 level	3,878,245,269	3,878,245,269	3,878,245,269	3,878,245,269	11,634,735,806
Deductible expenses due to baseline economic growth	-	880,043,274	2,406,286,768	2,441,780,803	5,728,110,845
Deductible expenses due to windfall profit tax	-	398,522,050	392,544,066	215,620,107	1,006,686,224
Deductible expenses due to tax reform	-	563,313,394	1,582,274,045	799,649,476	2,945,236,915
Total, Deductible Expenses	3,878,245,269	5,720,123,987	8,259,350,148	7,335,295,655	21,314,769,791
Base level of Adjustments to income, 2006 level	73,982,318	73,982,318	73,982,318	73,982,318	221,946,953
Adjustments to income due to economic growth	-	16,787,912	45,902,891	46,579,984	109,270,788

Adjustments to income due to tax reform program	-	(6,164,863)	(24,640,662)	(42,433,627)	(73,239,152)
Total, Adjustments to income	73,982,318	84,605,366	95,244,547	78,128,674	257,978,588
Loss Carry-forward baseline	-	-	-	-	-
Loss carry-forward deductions due to tax reform	-	34,294	1,989,312	16,050,143	18,073,750
Total loss carry-forward:	-	34,294	1,989,312	16,050,143	18,073,750
Total taxable income components:					
Baseline taxable income	983,111,104	983,111,104	983,111,104	983,111,104	2,949,333,311
Taxable income to due baseline growth	-	223,085,507	609,978,760	618,976,278	1,452,040,545
Taxable income due to tax reform	-	395,001,518	(153,339,708)	(189,428,804)	52,233,006
Taxable income due to windfall profit tax	-	(398,522,050)	(392,544,066)	(215,620,107)	(1,006,686,224)
Total taxable income:	983,111,104	1,202,676,079	1,047,206,089	1,197,038,470	3,446,920,638
Rate Change Effect Calculation					
Tax due before credits at actual tax rates	280,651,460	247,911,298	185,511,961	228,543,727	661,966,985
Tax due before credits at 2006 average rate	280,651,460	343,341,074	299,516,728	346,303,779	989,161,581
Revenue cost of lowering CIT rates	-	(95,429,776)	(114,004,768)	(117,760,052)	(327,194,596)
Tax credits					
Total credits claimed	85,971,117	29,295,236	6,290,067	3,475,270	39,060,573
Net tax due at regular rates, after credits	194,680,343	218,616,062	179,221,893	225,068,457	622,906,412

SECTION III: THE EFFECTS OF THE NEW PERSONAL INCOME TAX

A. Introduction

During the period 2003 to 2006, the PIT accounted for approximately one-tenth of total Mongolian government tax revenue. As part of the overall tax reform program, the parliament adopted a new PIT law in 2006 that became effective January 1, 2007.

The major changes in the PIT law can be summarized as follows:[1]

- Unified the tax rate on taxable personal income at 10%, replacing the three-tiered rates of 10, 20, and 30%.
- Raised the tax credit on taxable personal income from MNT 48,000 a year to MNT 84,000, statutorily exempting from taxes those below the poverty line, around 30%of the population, as well as at least an additional one-third of low income citizens.
- Reduced the number of tax rates from 8 to 4, reducing the administrative burden on taxpayers.
- Allowed sole proprietorship operators to deduct more legitimate costs of doing business.
- Limited opportunities for tax evasion by including fringe benefits in taxable income, and by empowering the GDT to restate related party transactions.
- Brought the law closer to international best practices.

B. Self-employed taxpayers

PIT liability is generally imposed on net taxable income. For most taxpayers, this can be calculated as follows:

> *Net income subject to tax* = Gross taxable income – total exempt income – total deductible expenses

Gross tax liability in turn is found by multiplying gross taxable income by the appropriate rates rate. Symbolically, this is defined as:

> *Gross income tax liability* = Net income subject to tax * PIT tax rate

These data are all available from the GDT, but the mapping to the data fields on Form TT-06 has varied almost annually as the form design itself has changed. The changes greatly complicate the process of modeling the relationships of PIT receipts to changes in tax law and macroeconomic conditions. In response to this challenge, we have adapted the general methodology to best take advantage of the data that is available. Essentially, the approach will focus on each of the elements in the equations used to calculate net tax liability, and to attempt to isolate the impact of the reform program on observed changes in their reported levels over time.

Gross taxable income

Generally, we expect gross income to fluctuate closely with the overall level of economic activity as measured by GDP. Historically, however, this relationship has not been particularly strong. A major problem has been the comparatively low degree of voluntary reporting of business income. One of the primary objectives of the reform program was to provide an environment in which potential taxpayers would feel encouraged to shift from the shadow economy into the legal economy. With that in mind, success should ultimately be measured by the increase in the reported gross tax base relative to GDP and the increase in the number of taxpayers.

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[1] A complete description of the changes may be found in GDT, *Personal Income Tax: New Law, Less Tax,* 2007.

The ratio of Total Gross Income to GDP averaged 2.6% from 2003 to 2006, with some variability over the period. Post reform levels have averaged 2.9% of reported GDP. The difference in total reported gross income from 2007 to 2009 and the levels that would have occurred had total gross income continued at the pre-reform average of 2.6% of GDP was approximately MNT 50 billion, or just about 10% of the increase in reported gross income over the period. This difference is suggestive of improved tax administration and/or enhanced voluntary compliance.

Exempt income

The reported level of exempt income has been increasing dramatically since 2003. The new law expanded the list of exemptions[2], but also eliminated certain donations and limited building expenses. Reported exempt income for the period of 2007 to 2009 was MNT 255 billion, more than half of the total reported gross income for the same period. The total level of exempt income from 2006 to 2009 was MNT 141 billion greater than would have been realized had the 2006 level of MNT 39 billion a year been maintained over that period.

The fact that the level of exempt income has been over half the gross tax base for the past three years is indicative of a major policy issue. The PIT is best used as a revenue source that can be targeted to households or individuals with incomes above a given threshold; the objectives of the reform program were in line with this concept. Problems arise when the income tax is used to address other social concerns such as assisting first time home buyers and those paying tuition for their children's education. Granting income tax exemptions for income used for such expenditures is generally not an efficient way to achieve social objectives for several reasons. First and foremost, the income tax system is geared to collect taxes from those who are significantly above the poverty line; the poorest taxpayers (and those most in need of support) do not have PIT liabilities and therefore do not benefit from having their income made exempt. Exemptions from income tax almost always favor higher income earners and provide little to no gain for lower income taxpayers. Second, the granting of exemptions can seriously undermine the perceived fairness of the tax system. When taxpayers earning similar incomes do not pay similar taxes, the trust in the horizontal equity of the system will be compromised. When two taxpayers with different incomes pay different taxes, vertical equity concerns may arise if the less well paid taxpayers ends up with a higher tax liability due to non-tax related consumption decisions.

Deductions

There were no major changes in the list of eligible deductions for the PIT. Deductible expenses have followed a very erratic pattern, increasing steadily between 2003 and 2005 but declining to MNT 22 billion in 2006 from MNT 31 billion the year before. Deductible expenses then grew very rapidly in 2007 and 2008, but in 2009 declined to MNT 16 billion, a level below that of 2003. The decline in deductible expenses in 2009 directly correlates with the decline in gross income reported for that year, and suggests of a link between voluntary reporting of business income and economic stress. In particular, the downturn of 2009 occurs alongside the decline in reported income and reduced deductible expenses; these reductions may be a reflection of the willingness of those operating on the edges of the shadow economy to more openly participate in the legal economy. Periods of economic stress, as were observed in 2009, may well be associated with a reduction in the reporting of both business income and business expenses by those on the margin.

Tax rate

[2] For purposes of this study, items referred to as "relief income" (row 20 of the GDT Consolidated Statement on PIT for 2007) are included as another exemption.

It is difficult to measure the effects of the lowered tax rate in isolation from all other effects; there are too many interdependencies among macroeconomic indicators, the various components of the tax base and tax liability, and not enough data to measure the effects with great confidence. The most reliable indicator appears to be gross tax liability as a percent of total gross income. The average ratio value for 2003 to 2006 was 6.2%; it declined to 5.2% for the post-reform period from 2007 to 2009. This suggests that the rate changes reduced the overall average effective rate by approximately 16%, and reduced potential collections by approximately 1% of growth reported from 2007 to 2009, a loss of MNT 5 billion.

Credits

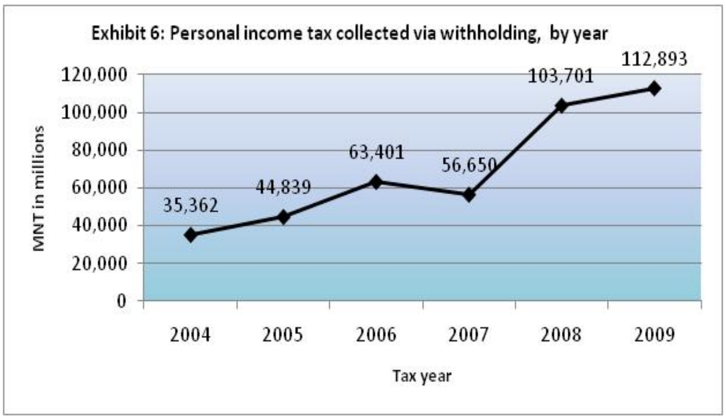
PIT credits appeared to have expanded considerably under the new law. The standard credit per taxpayer rose from MNT 48,000 to MNT 84,000. Credit for foreign taxes was also added in the new law. In view of this, it is difficult to fully reconcile this with the observed 56% reduction in average credits claimed per year of MNT 1.9 billion over 2003-06 to MNT 1 billion from 2007 to 2009 period.

PIT revenue

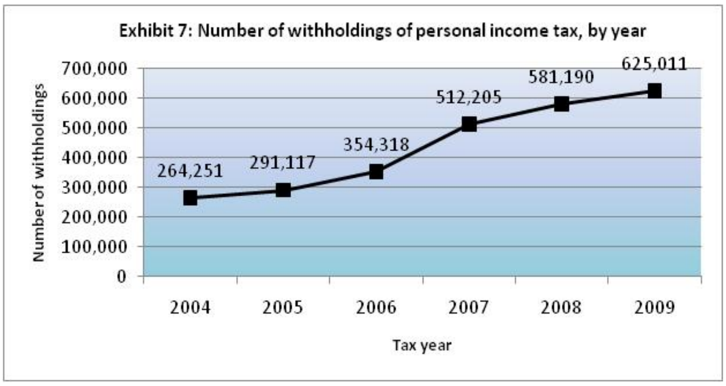
While the allocation of the change in revenue across the various base components may be difficult to calculate, the picture is somewhat clearer with regards to actual net revenue collections. The net result of the changes described above has been a tripling of PIT revenue between 2006 and 2007. PIT revenue has grown every year since 2003, but the increase from MNT 2,698 million in 2006 to MNT 8,854 million in 2007 was remarkable. Relative to gross income, the increase in revenue has been a little less spectacular. The Tax/Gross Income ratio was in the range of 2.5% to 4.2% over 2003 to 2006 and rose to 6.4% in 2007.

C. Taxpayers subject to withholding

Influenced most strongly by the changes in law, total PIT collected through withholding declined by 10.6 % in 2007; the total collected in that year was MNT 56.6 billion compared to MNT 63.4 billion in 2006, as shown in Exhibit 6. Collections from this source soared in 2008, however, increasing by 83% to MNT 103.7 billion, and rose a further 9% in 2009 as withholding totaled nearly MNT 113 billion.



Alternatively, the number of withholdings of personal income tax that companies reported (Exhibit 7) has continued to increase at a rapid pace throughout the post-reform era. Reported withholdings totaled 354,318 in 2006, rose to 512,205 in 2007 and reached 625,011 in 2009 – an increase of approximately 93% over three years.



This strongly suggests that there was a significant increase in compliance with the PIT law over the period. The divergence between trends in reported tax payments through withholding and numbers of withholdings in 2007 is indicative of a transition in the level of compliance that began that year, but was not in itself sufficiently strong to overcome the effects of the PIT rate decrease. Since 2007, increased compliance has more than offset the negative impacts on revenue from the rate reduction, and the overall balance for the post-reform period is overwhelmingly revenue positive.

D. PIT Revenue Productivity Index

The 2006 level of the PIT revenue productivity index stood at approximately 0.12, a level slightly below the world average of 0.14. Since tax reform, the index for the 2007 to 2009 period rose to 0.15.

Exhibit 8: SELF-EMPLOYED PIT ANALYTICAL TABLE FOR FULL-YEARS 2003-2009

(Thousands of MNT)

DESCRIPTION	2003	2004	2005	2006	2007	2008	2009	AVG 2003-06	AVG 2007-09
Total gross income	47,483,910	72,990,816	70,322,099	64,612,865	137,548,167	183,162,127	161,360,802	63,852,422	160,690,365
Total exempt income ("relief/credit income")	629,471	12,476,510	11,775,372	35,012,321	39,285,671	96,166,824	119,456,686	14,973,418	84,969,727
Total documented deductible expenses	20,025,298	25,246,633	31,397,714	22,344,094	30,351,095	50,834,887	16,270,285	24,753,435	32,485,423
Net income subject to tax	26,829,141	35,267,673	27,149,013	7,256,450	67,911,401	36,160,416	13,074,902	24,125,569	39,048,906
Gross tax liability	3,406,916	4,021,335	3,825,123	4,430,025	9,381,149	7,133,040	7,943,323	3,920,850	8,152,504
Total tax credits	1,941,383	2,208,290	1,880,391	1,732,333	527,153	1,408,250	1,360,029	1,940,599	1,098,477
Total tax revenue	1,465,533	1,813,045	1,944,732	2,697,692	8,853,996	5,724,790	6,583,294	1,980,251	7,054,027
GDP (Billions of MNT)	1,660	2,152	2,780	3,715	4,558	6,020	6,054	2,577	5,544
Gross income / GDP	2.9%	3.4%	2.5%	1.7%	3.0%	3.0%	2.7%	2.6%	2.9%
Exempt income / Total gross income	1.3%	17.1%	16.7%	54.2%	28.6%	52.5%	74.0%	22.3%	51.7%
Documented expenses / total gross income	42.2%	34.6%	44.6%	34.6%	22.1%	27.8%	10.1%	39.0%	20.0%

Exhibit 9: PIT ANALYTICAL TABLE FOR FULL-YEARS 2003-2009

(Thousands of MNT)

	2003	2004	2005	2006	2007	2008	2009	Tot 2003-06	Tot 2007-09
Total gross income	47,483,910	72,990,816	70,322,099	64,612,865	137,548,167	183,162,127	161,360,802	255,409,690	482,071,096
Baseline gross income - gross income at pre-reform average of 2.6% of GDP	47,483,910	72,990,816	70,322,099	64,612,865	118,508,000	156,520,000	157,404,000	255,409,690	432,432,000
Excess over baseline	-	-	-	-	19,040,167	26,642,127	3,956,802	-	49,639,096
Total exempt income	629,471	12,476,510	11,775,372	35,012,321	39,285,671	96,166,824	119,456,686	59,893,674	254,909,181
Growth in exempt income	0	1882.1%	-5.6%	197.3%	12.2%	144.8%	24.2%		
Exempt income/ Gross income	1.3%	17.1%	16.7%	54.2%	28.6%	52.5%	74.0%		
Excess of exempt income over the 2006 level.	-	-	-	-	4,273,350	56,881,153	80,171,015	-	141,325,518
								AVG2004-6	AVG2007-9
Average tax rate (gross tax / gross taxable income)	0.07174885	0.05509371	0.05439432	0.0685626	0.068202646	0.03894386	0.049227092	0.062449866	0.052124533

SECTION IV: EFFECTS OF CHANGES IN THE VALUE-ADDED TAX

A. Introduction

A clear objective of the policy reform program enacted in 2006 was to shift the tax system towards a more consumption-based orientation and away from a reliance on income taxes. The VAT has become the dominant tax revenue source in Mongolia in recent years. During the middle of this decade, VAT accounted for approximately 30%of total Mongolian tax revenue. In 2007, VAT accounted for MNT 252 billion in net tax revenue.[3] The net revenue is the difference between gross VAT receipts of MNT 648 billion and MNT 396 billion in VAT refunds and credits.

From 2005 to 2007, net VAT revenue grew at a slower pace than GDP because the rapidly growing export component of GDP is not taxed and the VAT rate was lowered in 2007. Subsequent to the tax reform initiative, net receipts VAT increased by a relatively robust 28% to MNT 323 billion before declining to MNT 302 billion in 2009. Just as the expanding economy boosted receipts in 2008, the results in 2009 were at least a partial reflection of the financial crisis in Mongolia. A major focal point of this analysis is to separate the effects of the changing economy as well as the tax reform measures so as to better understand this performance.

B. Main VAT reform elements

The guiding principles in the VAT reform were to preserve the stability of the VAT revenue stream, to encourage greater voluntary compliance with the tax law by reducing the tax rate, to minimize economic distortions under the pre-reform VAT law, and to bring the law into closer conformity with the highest international standards. Among the key measure in the reform program were:

1. Reduction of the VAT rate from 15% to 10%.
2. Expansion of the tax base to include a greater range of goods, works, and services.
3. Modification of the set of goods, works, and services that are either exempt from VAT or which are taxed under the VAT at a zero rate.

Conceptually, the reduction in the VAT rate lowers the differential in prices that consumers face when presented with the opportunity to purchase goods from either a VAT-registered or non-registered vendor, which should induce more businesses to register. Firms benefit from registration, in that it relieves them of VAT liability on their purchases of business inputs as they are able to claim a credit for taxes paid on such purchases. When this benefit outweighs the lost opportunity to be able to sell to consumers at a lower price than VAT-registered businesses, profit maximizing firms should choose to register.

The expansion of the range of taxed goods, works, and services moderates the impact of the tax system on the allocation of resources within the economy. Sectors (or products) receiving VAT preferences become more attractive to investors, to the detriment of investment in non-benefited sectors. This disrupts the efficiency of the market mechanism for allocating investment, and national output as a whole is less than it otherwise would be. By shrinking the list of preferences, the tax reform program enhances prospects for future economic growth.

The exemptions dropped from the prior VAT law were:

- Services of tourist camps, restaurants, tour transport and hotels.

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[3] All revenue data in this report were obtained from detailed digital files provided to EPRC/USAID by the Mongolian GDT and Customs. Summaries of these data appear in tables 1 and 2 at the end of the report. GDP estimates were taken from the IMF country reports on Mongolia.

- Primary raw materials from Mongolian agriculture, forestry, and hunting.
- Equipment used in foreign investments in certain industries.
- Vehicles of returning diplomats.

The new law also repealed several exemptions that were based on other laws and were legislated separately from the main VAT law of 8 January 1998. A few new exemptions also were created by the VAT law, including:

- Civil aviation aircraft and spare parts.
- Mongolian currency printed in foreign countries.
- Sold newspapers.

Under the new VAT law, 14 categories of goods and 8 categories of services (counting all types of financial services as one category) remain exempt, as do all sellers with sales less than MNT 10 million. In addition there were two additional items zero-rated under the new law:

- Services provided to a foreign citizen or legal entity not present in Mongolia.
- State medals and coins produced domestically.

C. Estimation methods

The objective of this analysis is to obtain estimates of the impact of the changes in the VAT law. There is little direct information available on the changes in specific exemptions, so only their aggregate effects are estimated below. The basic method of estimating the revenue effect of changes in the VAT law is straightforward. The overall change in gross VAT revenue is divided into several components according to whether the changes are in imports or domestic sales, whether the changes are in the rate or the base, and whether the changes reflect the legal or economic factors influencing the size of the base. Finally, the economic factors are divided into a component reflecting the indirect effects of the change in VAT rate and a component reflecting other economic changes such as economic growth. Limited time-series data and the absence of a reliable macroeconomic model for Mongolia allow the analysis of economic variables only very simple assumptions.

C1. Gross VAT revenues

Gross VAT revenue is equal to the product of the VAT rate and the gross VAT base. This base consists of all non-exempt and non-zero-rated sales by businesses having sales in excess of MNT 10 million. Since the reform program changed both the VAT rate and the VAT base, we have to identify the effects of both changes separately. Our problem is thus to quantify the elements of the following identity:

Change in Gross VAT Receipts = Change in receipts due to the change in the tax rate

+ Change in receipts due to changes in the VAT base

In reality, the change in receipts due to the change to the VAT base is somewhat more complicated than it might at first appear. In reality, there are three general components to the change in the VAT base which must be considered:

1. The change in receipts due to modifications to the legally defined tax base.
2. The change in receipts due to normal economic growth.
3. The change in receipts due to other economic effects precipitated by the reform program.

C2. Changes in the legal definition of the tax base

The legal change is that part of the change in the taxable base directly attributable to change in the VAT law, such as changes in exemptions and zero-rating. Since the VAT law defined different tax bases for imports versus domestic transaction, we use slightly different approaches for each. The GDT reports the exemptions, zero-rating, and deductions that yield taxable domestic sales. Imports, on the other hand, are reported by Customs and the taxable base includes customs duties and excises[4] but excludes exempt imports.

We estimate the effects of changes to the legally defined VAT base for imports by assuming that the same ratio of taxable imports to total imports that we observed over the 2004-2006 period would apply to imports throughout 2007-2009 in the absence of the new law. The difference between the level of taxable imports that we observed and what we would have expected to occur under this assumption gives us a measure of the change in the VAT import base due to legal changes in the base definition. For each year in the post-reform period, we can calculate the following:

> *Change in the VAT base at import due to legal changes of the base* = Imports subject to VAT * Average ratio of Taxable imports to total imports for the period 2004-2006

In a similar manner, the change in the domestic gross VAT base due to changes in the legal definition of that base can be calculated by assuming that the same ratio of taxable domestic sales to total domestic sales observed over the 2004-2006 period would apply to 2007 forward in the absence of the new law. Thus,

> *Change in the domestic gross VAT base due to legal changes of the base* = Sales subject to VAT * Average ratio of Taxable sales to total sales for the period 2004-2006

C3. Changes in the VAT base due to baseline economic growth

The change in the base attributable to changes in economic conditions can be estimated by assuming that import and domestic sales would respond to changes in nominal GDP in the near future similarly to how they responded over the period of 2004 to 2006. During that interval, total imports and total domestic sales grew at a rate of approximately 70% the rate of nominal GDP. We thus estimate the effects of changes in baseline economic growth for imports and domestic sales as follows:

> *Change in gross domestic VAT base due to baseline economic growth* = Gross domestic VAT base in the previous year * .7* Growth rate for nominal GDP in the current year * Average ratio of taxable sales to total sales for the period 2004-06

> *Change in gross import VAT base due to baseline economic growth* = Gross domestic VAT baser in the previous year * .7* Growth rate for nominal GDP in the current year * Average ratio of taxable sales to total sales for the period 2004-06

C4. Other economic effects associated with the reform of the VAT

Changes in tax law are almost always associated with changes in behavior. The lowering of the tax rate might induce more sellers to register as taxpayers and/or encourage consumers to buy more goods. At the same time, tax agencies may become more or less efficient in their ability to administer the tax. It is very difficult to estimate these effects separately, particularly in the absence of a fully developed simulation model. For our purposes, their combined effect should serve as a good indicator of the success of the reform program in encouraging greater

[4] Special taxes on petroleum products are listed separately by Customs but are considered to be excises for purposes of analysis.

participation in the formal economy. Thus we can simply take what is *not* explained by changes in the legal base and by baseline economic growth as our measure of these 'other' indirect economic effects. Our estimate for domestic and import base changes due to other economic effects thus become:

> *Change in gross domestic VAT base due to other economic effects* = Total change in gross domestic VAT base - Change in the domestic gross VAT base due to legal changes of the base - Change in gross domestic VAT base due to baseline economic growth
>
> *Change in gross import VAT base due to other economic effects* = Total change in gross import VAT base - Change in the gross import VAT base due to legal changes of the base - Change in gross import VAT base due to baseline economic growth

Credits and net VAT

The VAT differs from other sales taxes by its system of refunds and credits to sellers for VAT they have paid on their purchases. Not all purchases are tax refundable at their full amount, but the GDT tables report the amounts of VAT that can be deducted from gross VAT revenue to obtain net VAT revenue:

> *Net VAT revenue = Gross VAT revenue – Creditable VAT paid on inputs*

There were only minor changes in the VAT law with respect to the deduction of input credits. Therefore, it is assumed that changes in creditable VAT paid on inputs are related only to two other factors:

1. Changes in tax administration and the enforcement of limitations on these deductions.
2. Changes in the ratio of input purchases to sales. (There is insufficient data at this time to fully explore the impacts of any changes in such ratios over time.)

D. Calculations for domestic VAT

The relationships identified earlier in this section can all be evaluated using data provided by GDT for the years 2004 to 2009. Table 1 provides details for domestic VAT from aggregated TP-03 statements; Table 2 provides a breakdown of the determinants of change.

D1. The effects of lowering the VAT rate on domestic VAT liability

The domestic VAT base has expanded rapidly during the post-reform era. From 2007 to 2009, total sales increased by a robust 157% in comparison to the three years prior to reform, while sales subject to VAT increased at an even faster rate of 164%. This steady expansion of the VAT base permitted gross domestic VAT revenues to increase each year since the reforms went into effect despite the lowering of the VAT rate.

Total gross domestic VAT liability reported for 2007 to 2009 amounted to MNT 1,760 billion. Lowering the tax rate from 15% to 10% means that the 'lost' revenue from the rate changes over the period would be 5% of that, or MNT 880 billion. The revenue cost of maintaining a lower VAT rate will increase over time as the level of gross domestic VAT increases. Based on available data, it is estimated that the rate reduction reduced gross VAT liabilities by MNT 219 billion in 2007, MNT 315 billion in 2008, and MNT 347 billion in 2009.

D2. The effects of changing the legally defined VAT base

As noted, the tax reform program sought to broaden the tax base, but also created a limited number of new exemptions and added new items to the list of commodities that are zero-rated. On balance, the reform objectives appear to have succeeded as we estimate that the changes in the legal definition of the tax base would have, in isolation from the other VAT changes, increased gross VAT collections by a minimal amount in 2007, MNT 26 billion in 2008, and MNT 69 billion in 2009.

It is important to note that the reform program successfully reversed a sharp increase in exempt sales that had occurred in 2006. Exemptions and other preferences create tax avoidance opportunities and must be resisted if the integrity of the VAT system is to be maintained.

D3. The effects of baseline economic growth on VAT liability

We estimate that the baseline growth in the Mongolian economy resulted in increased gross domestic VAT revenues of MNT 106 billion in 2007, MNT 305 billion in 2008, and MNT 309 billion in 2009. This tracks very closely with the performance of nominal GDP, which registered its strongest gains in 2008 and was essentially flat in 2009.

D4. Other economic effects on gross domestic VAT revenues

The estimated increase in gross domestic VAT revenues from other economic factors was MNT 157 billion in 2007, MNT 220 billion in 2008, and MNT 270 billion in 2009. This reflects an initial strong gain from increased participation in the tax system, reflective of what is regarded by the public as a less punitive tax policy as well as more effective tax administration.

Exhibit 10: SUMMARY OF DOMESTIC VAT (Thousands of MNT)

Line No. 2005-6	VAT Statement Line Description	2004	2005	2006	2007	2008	2009
12	Total sales	2,643,149,995	3,108,576,009	4,395,468,286	6,645,036,131	9,301,004,175	10,119,734,229
28	VAT exempt sale	342,414,388	374,663,169	598,123,940	430,338,074	559,776,401	611,475,046
29	VAT zero-rated exports	432,519,162	548,772,567	1,177,697,933	1,856,742,493	2,459,043,583	2,567,104,086
30	Sales subject to VAT	1,868,214,964	2,185,142,772	2,619,705,691	4,370,573,549	6,291,112,185	6,941,470,593
38	VAT imposed	280,258,954	327,750,604	392,924,969	437,037,376	629,082,429	694,147,503
30-38	Total VAT deductible	260,362,240	307,887,712	373,145,205	395,619,998	607,369,370	644,083,851
	Net VAT	19,896,714	19,862,892	19,779,764	41,417,378	21,713,059	50,063,652
Change from Prior Period							
12	Total sales	-	465,426,014	1,286,892,277	2,249,567,845	2,655,968,044	818,730,054
28	VAT exempt sale	-	32,248,781	223,460,771	-167,785,866	129,438,327	51,698,645
29	VAT zero-rated exports	-	116,253,405	628,925,366	679,044,560	602,301,090	108,060,503
30	Sales subject to VAT	-	316,927,808	434,562,919	1,750,867,858	1,920,538,636	650,358,408
38	VAT imposed	-	47,491,651	65,174,365	44,112,407	192,045,053	65,065,074
30-38	Total VAT deductible	-	47,525,472	65,257,493	22,474,793	211,749,372	36,714,481
	Net VAT	-	-33,821	-83,129	21,637,614	-19,704,319	28,350,593
% Change from Prior Period:							
12	Total sales	-	17.6%	41.4%	51.2%	40.0%	8.8%
28	VAT exempt sale	-	9.4%	59.6%	-28.1%	30.1%	9.2%
29	VAT zero-rated exports	-	26.9%	114.6%	57.7%	32.4%	4.4%
30	Sales subject to VAT	-	17.0%	19.9%	66.8%	43.9%	10.3%
38	VAT imposed	-	16.9%	19.9%	11.2%	43.9%	10.3%
30-38	Total VAT deductible	-	18.3%	21.2%	6.0%	53.5%	6.0%
	Net VAT	-	-0.2%	-0.4%	109.4%	-47.6%	130.6%

Exhibit 11: SUMMARY OF DETERMINANTS OF CHANGE FOR DOMESTIC VAT
(Thousands of MNT)

Post-reform Base Changes	2007	2008	2009	2007-09
Legal base expansion	621,983	175,147,747	461,613,374	637,383,103
Baseline economic growth	703,562,202	2,030,861,456	2,056,949,075	4,791,372,733
VAT-related economic effects	1,046,683,673	1,465,397,292	1,803,202,453	4,315,283,418
Total post-reform base expansion	1,750,867,858	3,671,406,494	4,321,764,902	9,744,039,254
Post-reform effects on gross domestic VAT				
Rate change revenue effect	(218,528,677)	(314,555,609)	(347,073,530)	(880,157,816)
Revenue from legal base expansion	93,297	26,272,162	69,242,006	95,607,466
Revenue from post-reform baseline growth	105,534,330	304,629,218	308,542,361	718,705,910
Revenue from VAT-related economic effects	157,002,551	219,809,594	270,480,368	647,292,513
Total reform effect on gross VAT	44,101,501	236,155,365	301,191,206	581,448,072
Change in Deductible VAT	22,474,793	234,224,165	270,938,645	527,637,603
Net Change in Domestic VAT	21,626,708	1,931,200	30,252,560	53,810,469

E. Calculations for VAT on imports

Table 3 provides an overview of the observed history of the VAT at the import tax base; Table 4 summarizes the estimated allocation of the factors responsible for the changes in receipts since the adoption of the tax reform initiative.

E1. The effect of lowering the VAT rate on domestic VAT liability

The total level of imports also expanded rapidly during the first two years of the post-reform era (increasing by 38% in 2007 and 40% in 2009), but declined by 18% in 2009. Despite the increase in the value of imports in 2007, VAT collections on imports were essentially unchanged that year. On balance, it appears that for 2007 the reduction in the VAT rate and an increase in exempt imports that year largely offset the growth in imports and the legal expansion of the import VAT base.

The total reported import VAT taxable base for 2007 to 2009 amounted to MNT 7,626 billion. As the tax rate decreased from 15% to 10%, the 'lost' revenue from the lowered VAT rate for the period would be 5% of that amount, or MNT 381 billion. The revenue cost of maintaining a lower VAT rate will increase over time as the level of gross domestic VAT increases. Based on available data, it is estimated that the rate reduction reduced gross VAT liabilities by MNT 105 billion in 2007, MNT 150 billion in 2008, and MNT 126 billion in 2009.

E2. The effects of changing the legally defined base for VAT at import

Using the same methodology as before, we estimate that the changes in the legal definition of the tax base would have, in isolation from the other VAT changes, increased gross import VAT collections by MNT 26 billion in 2007, MNT 73 billion in 2008, and MNT 120 billion in 2009.

The impacts of the base expansion can be seen by examining the ratio of actual VAT collections to potential VAT collections – what would have been generated if all imports had been subject to VAT. During 2004 to 2006, this ratio remained fairly constant at approximately 75%. The ratio has increased steadily since that time, increasing to 82% in 2007, and continuing to climb through 2009, when it is estimated at 86%.

E3. The effects of baseline economic growth on VAT liability

We estimate that the baseline growth in the Mongolian economy resulted in increased VAT at import revenues of MNT 34 billion in 2007, MNT 103 billion in 2008, and MNT 120 billion in 2009. This tracks very closely with the performance of nominal GDP, which registered its strongest gain in 2008 and was essentially flat in 2009.

E4. Other economic effects on the import VAT collections

After accounting for the changes in the legal definition of the tax base and the effects of baseline economic growth, it is estimated that "other" economic factors served to boost import VAT revenues by MNT 44 billion in 2007 and MNT 20 billion in 2008, but served to reduce such revenues by MNT 124 billion in 2009. As these estimates encompass the effects of several distinct factors, the rationale for this pattern depends upon which year we discuss. 2007 revenues were positively impacted by a reduced cost of compliance with the tax law, which in turn appears to have led to increased voluntary compliance. By 2009, however, the financial crisis and slow economic growth had created a very different environment, which both reduced demand for imported goods and reduced the level of compliance with this tax law.

F. Combined effects of domestic and import VAT

While the VAT is administered separately for domestic transactions and at import, they ultimately interact and form a cohesive unitary system of consumption taxation. VAT paid at import can, for example, be claimed as a credit against domestic VAT liability. This highlights the need to consider the combined effects on both components of the VAT system when evaluating the effectiveness of the tax reform program. To assist with this, Table 5 provides a summary of the combined effects.

For the three years that the reform program has been in effect, the reduction in the VAT rate has reduced gross VAT revenues by MNT 1,261 billion. This has been more than offset by growth in the VAT base. The expansion of the legal definition of the VAT base has increased gross VAT revenues by MNT 315 billion, baseline economic growth accounts for an additional MNT 960 billion, and other VAT-related economic effects have led to an additional MNT 696 billion. The resulting net increase in gross VAT revenues of MNT 709 billion was far in excess of the increase of MNT 271 billion in deductible VAT, producing a net addition to VAT revenues of MNT 438 billion over the three year period.

G. Tax reform and the VAT Productivity Index

The success of the tax reform program can be seen in how it has affected the VAT productivity ratio. In 2006, the index stood at 0.42, roughly in line with the global average. From 2007 to 2009, the index averaged 0.53, an increase of more than 25% to a rate that compared favorably with VAT regimes in East Asia and the Pacific region.

Exhibit 12: SUMMARY OF IMPORT DATA (Thousands of MNT)

Year	2004	2005	2006	2007	2008	2009
Value of imports	1,190,108,154	1,406,705,909	1,732,258,981	2,398,067,565	3,354,099,882	2,747,384,093
Tariff revenue	41,432,408	53,105,258	66,439,346	97,729,659	141,078,824	106,572,136
Excise revenue	49,006,573	50,716,417	63,790,737	83,790,130	110,160,350	74,143,313
Other taxes	6,342,106	6,008,168	6,104,935	6,670,758	7,864,072	6,923,841
VAT revenue	141,427,389	170,476,875	211,561,946	210,660,752	300,830,115	251,123,856
Total VAT Base	1,286,889,241	1,516,535,751	1,868,593,998	2,586,258,112	3,613,203,127	2,935,023,383
Potential VAT	193,033,386	227,480,363	280,289,100	258,625,811	361,320,313	293,502,338
Actual/Potential	0.733	0.749	0.755	0.815	0.833	0.856
Taxable Imports	942,849,261	1,136,512,499	1,410,412,976	2,106,607,515	3,008,301,155	2,511,238,560

Change From Previous Period

Year	2004	2005	2006	2007	2008	2009
Value of imports	-	216,597,755	325,553,072	665,808,584	956,032,317	(606,715,789)
Tariff revenue	-	11,672,850	13,334,087	31,290,314	43,349,165	(34,506,688)
Excise revenue	-	1,709,844	13,074,320	19,999,393	26,370,219	(36,017,036)
Other taxes	-	(333,939)	96,768	565,822	1,193,314	(940,231)
VAT revenue	-	29,049,486	41,085,072	(901,195)	90,169,364	(49,706,260)
Total VAT Base	-	229,646,510	352,058,247	717,664,114	1,026,945,015	(678,179,744)
Potential VAT	-	34,446,976	52,808,737	(21,663,289)	102,694,502	(67,817,974)
Actual/Potential	-	0.017	0.005	0.060	0.018	0.023
Taxable Imports	-	193,663,238	273,900,477	696,194,540	901,693,639	(497,062,595)

%Change From Previous Period Year	2004	2005	2006	2007	2008	2009
Value of imports	-	18%	23%	38%	40%	-18%
Tariff revenue	-	28%	25%	47%	44%	-24%
Excise revenue	-	3%	26%	31%	31%	-33%
Other taxes	-	-5%	2%	9%	18%	-12%
VAT revenue	-	21%	24%	0%	43%	-17%
Total VAT Base	-	18%	23%	38%	40%	-19%
Potential VAT	-	18%	23%	-8%	40%	-19%
Actual/Potential	-	2%	1%	8%	2%	3%
Taxable Imports	-	21%	24%	49%	43%	-17%

Exhibit 13: SUMMARY OF DETERMINANTS OF CHANGE FOR IMPORT VAT
(Thousands of MNT)

Post-reform Base Changes	2007	2008	2009	2007-09
Legal base expansion	174,796,400	484,207,629	803,124,096	1,462,128,124
Baseline economic growth	227,076,489	684,210,320	696,002,860	1,607,289,670
VAT-related economic effects	294,321,651	429,470,230	(398,301,372)	325,490,508
Total post-reform base expansion	696,194,540	1,597,888,179	1,100,825,584	3,394,908,302
Post-reform effects on Import VAT				
Rate change revenue effect	(105,330,376)	(150,415,058)	(125,561,928)	(381,307,361)
Revenue from legal base expansion	26,219,460	72,631,144	120,468,614	219,319,219
Revenue from post-reform baseline growth	34,061,473	102,631,548	104,400,429	241,093,450
Revenue from VAT-related economic effects	44,148,248	64,420,535	(59,745,206)	48,823,576
Total reform effect on import VAT	(901,195)	89,268,169	39,561,910	127,928,884

Exhibit 14: SUMMARY OF DETERMINANTS OF CHANGE FOR IMPORT AND DOMESTIC VAT
(Thousands of MNT)

Post-reform Base Changes	2007	2008	2009	2007-09
Legal base expansion	175,418,382	659,355,375	1,264,737,470	2,099,511,228
Baseline economic growth	930,638,691	2,715,071,776	2,752,951,935	6,398,662,402
VAT-related economic effects	1,341,005,324	1,894,867,522	1,404,901,080	4,640,773,926
Total post-reform base expansion	2,447,062,398	5,269,294,673	5,422,590,486	13,138,947,556
Post-reform effects on gross domestic VAT				
Rate change revenue effect	(323,859,053)	(464,970,667)	(472,635,458)	(1,261,465,178)
Revenue from legal base expansion	26,312,757	98,903,306	189,710,620	314,926,684
Revenue from post-reform baseline growth	139,595,804	407,260,766	412,942,790	959,799,360
Revenue from VAT-related economic effects	201,150,799	284,230,128	210,735,162	696,116,089
Total reform effect on gross VAT	43,200,306	325,423,534	340,753,115	709,376,956
Change in Deductible VAT	22,474,793	211,749,372	36,714,481	270,938,645
Net Change in Domestic VAT	20,725,513	113,674,162	304,038,635	438,438,310

SECTION V: CONCLUSIONS AND RECOMMENDATIONS

Aggregate tax records for 2007 to 2009 were used to examine the impact of new tax laws on PIT, CIT, and VAT that became effective on 1 January 2007.

A. Conclusions

A1. Personal income tax impact

Personal income tax revenues for the post-reform period indicate that there was a discernible impact on "reducing the size of the shadow economy and expanding the tax base," a key objective of the reform. Analysis of PIT shows increased revenues and an expanded tax base (more returns from self employed and increased number of withholdings from those employed). Tax reform induced changes had a distinct and measurable impact on the increase in PIT receipts through withholdings. More specifically:

- The number of employees with PIT tax withheld through payroll jumped by 45% in 2007 from the previous year to 512,205 and has steadily increased to 625,011 in 2009 indicating increased formalization of business payrolls and an expansion of the tax base.
- The number of tax returns from the self-employed expanded by 48% between 2006 and 2009 to 72,928 filers, indicating increased formalization of the economy.
- After a 10% dip in revenues collected in 2007 relative to 2006, PIT revenue collected from withholdings through payroll was up 78% in 2009, MNT 112,893 million, relative to 2006.
- PIT collected from the self employed more than tripled during 2007 relative to 2006. At MNT 6,583 million in 2009, PIT collected from the self-employed was more than double the 2006 level.
- Tax reform induced changes accounted for 61% of the increase in PIT receipts through withholdings, with underlying economic growth accounting for the remaining 39%.

A2. Corporate income tax impact

Analysis of CIT impacts shows increased revenues linked to an expansion of the tax base (more returns) and greater reported gross income of companies. Distinct tax reform direct and indirect effects accounted for 42% of the increase in corporate net taxable income. More specifically:

- The number of CIT returns with tax due increased by 25% in 2009, to 20,563 taxpayers, relative to 2006.
- Corporate gross income reported increased by 43% to MNT 6,845,268.6 million in 2007 relative to the year before.
- CIT revenues were 16% higher in 2009, MNT 225,068.5 million, than in 2006.
- Distinct tax reform direct and indirect effects accounted for 42% of the increase in corporate net taxable income, with underlying economic growth accounting for the remainder of the change.

A3. Value-added tax impact

Analysis of domestic VAT returns shows increased VAT revenues by 2.5 times and almost a doubling of the domestic tax base. Tax reform direct and indirect effects accounted for 44% of the expansion of the domestic VAT base growth, and expansion of the legal tax base accounted for an additional 7% of the change. Analysis of VAT collected at the border shows an expansion of the VAT on imports tax base of 38% that rendered the reduction in rates, from 15 to 10%, revenue neutral. 43% of the change in the 2007 to 2009 VAT on imports base growth relative to 2006 was due to expansion of the legal base brought about by the tax reform, with an additional 10% attributed to the direct and indirect effects of the tax reform.

- The number of domestic VAT returns almost doubled in 2009, 11,820 returns, relative to 2006, indicating more domestic businesses chose to register and formalize their status.
- Revenues from domestic VAT returns in 2009 increased 2.5 times, to MNT 50,064 million.
- Distinct tax reform direct and indirect effects accounted for 44% of the expansion of the domestic VAT base growth, and expansion of the legal tax base accounted for an additional 7% of the change; underlying economic growth accounted for 49% of the change.
- Contrary to expectations of a sharp decline, VAT collected from imports went down less than one percent in 2007, to MNT 210,660.7 million relative to 2006 as the legal expansion of VAT base and reduction of exemptions increased the tax base by 38%; collections of VAT on imports increased to MNT 300,830.1 million in 2008 but declined to MNT 251,123.9 million in 2009 as taxable imports declined by over 16%.
- 43% of the change in the 2007-2009 VAT on imports base growth relative to 2006 was due to expansion of the legal base brought about by the tax reform, with an additional 10% attributed to the direct and indirect effects of the tax reform; the remainder 47% of the change was due to underlying economic growth.

A4. Impact of reforms is distinct from economic growth

The impact of the new laws, revised regulations, public and taxpayers' education and informational efforts as well as training of tax inspectors and collectors is also measurably distinct from that of expected growth of economic activity as measured by increases in GDP.

In the case of the PIT, the growth in gross income by the self-employed increased faster than did GDP. If the ratio of reported gross income to GDP observed in 2006 had remained constant from 2007 to 2009, nearly MNT 50 billion (12%) less gross income would have been declared. For withholding, the impact of reform is substantially more dramatic; it is estimated that economic growth accounts for approximately 61% of the increase in receipts, while tax reform induced changes are responsible for the remaining 39%.

Corporate income tax data for 2007 to 2009 also indicate a measurable impact over and above the pace of economic activity. Normal economic growth (as measured by GDP) accounted for 70% of the increase in reported gross income, with tax reform related effects responsible for the remaining 30% Normal economic growth accounted for 58% of the increase in reported taxable income, tax reform the remaining 42%.

The effect of the tax reform measures is also discernible in the domestic VAT base. Normal economic activity effects account for 49% of the change on the domestic VAT base from 2007 to 2009, whereas statutory changes in the VAT law such as reductions in exemptions and zero-rating accounted for 7%, with the remaining 44% attributable to other economic changes that the VAT reform induced)including voluntary compliance.)

Similar analysis of the impact of the tax reform on the expansion of the taxable VAT base at the border shows that economic activity accounted for 47% of the increase while VAT legal base changes contributed 43% and other economic effects of the VAT tax reform accounted for the remaining 10%.

B. Recommendations

While the trends observed to date indicate that the reform program has produced a stable revenue stream, this does not guarantee that the trends will continue without constant effort on the part of the GDT. Revenue gains have accrued by bringing more taxpayers in to the tax net; efforts must continue to identify individuals who do not voluntarily participate or there will be a powerful incentive for those recently added to the tax rolls to slip once again into the shadows. The pressure to do so is always intensified during periods of economic distress, such as the recent situation in Mongolia.

It is clear that there are still issues with the shadow economy; the relative revenue productivity of the PIT, CIT, and VAT all remain fairly low in comparison to world standards. The GDT should dedicate itself to measuring its performance not only by how much revenue it collects relative to previous periods, but also how much it collects relative to what could potentially be collected. This can only be ascertained by making increased use of external data sources to identify potential collection levels by sector, and using that information in planning how to allocate its enforcement resources.

External data sources can help answer significant questions such as:

- How effective have the reforms been in reducing the impact of the shadow economy on collections?
- How large is the tax gap, i.e., how do overall tax collections in the post reform environment compare to potential collections?
- Are there differences in the relative size of the tax gap across various economic sectors?
- How much do the exceptions/preferences in the tax laws reduce collections?
- How does the tax system affect investment across the various economic sectors?

All these questions can be addressed by a careful examination of available data:

- The Input-Output tables from 2005.
- The Household Socio-Economic Survey from 2007 – 2008.
- The Household, Unincorporated Enterprises and Informal Sector Survey from 2007 – 2008.

Recommendations for further analysis of the impact of the tax reform measures and improvement of the tax system are:

Recommendation 1: Perform a "Tax Gap Analysis" to estimate potential versus actual tax collections of VAT, CIT, and PIT.
This would allow measuring the impact of the shadow economy on tax collections and provide a benchmark against which to gauge actual collections.

Recommendation 2: Estimation of Marginal effective Tax Rates (METRs).
Estimation of METRs would provide measures of the combined effects of the VAT, CIT and PIT on investment by economic sector. Sectoral METRs are the best set of indicators of the impact of a tax system on investment and can be used to evaluate competitiveness internationally as well as across sectors.

Recommendation 3: Estimation of the fiscal cost of major exemptions and preferences.
Collections for any tax can fall short of the theoretical maximum levels for reasons other than the existence of a shadow economy. Tax laws contain preferences, exceptions, and exemptions which reduce revenues. As these deviations from the "normal" tax structure impact the budget just as do direct expenditures, they are commonly referred to as "Tax Expenditures." Tax

expenditure amounts should be monitored annually in order to ensure that the costs of the foregone revenue are proportionate to the benefits conferred.