Revenue Estimates for the Proposed Tax Code of Kyrgyzstan: Summary Note

Background

This analysis is conducted within an assignment with EREC Kyrgyzstan, in response to a Memorandum dated 9 May, 2008. The purpose of this exercise is to identify and estimate the major revenue implications from the draft PTC. The Memorandum indicated that such changes are expected in the three major taxes: the Personal Income Tax (PIT), Enterprise Income Tax (EPT), and Value Added Tax (VAT). Although the Memorandum notes that other changes are possible, and there are indeed other provisions including introduction of a Property Tax, this analysis focused on the three major taxes listed above.

Description of Baseline

- Baseline Policy. The baseline policy for this analysis is the current (2008) Tax Code of Kyrgyz Republic. It has the following approaches to the three taxes in question:

    - PIT: All taxpayers are taxed at 10%. It allows for all expenses on mortgages (both principal and interest) be deductible from taxable income.

    - EPT: Enterprise profit is taxed at 10% rate. The Tax Code allows enterprises to deduct from their taxable profit their payments of Emergency Tax and Road Tax.

    - VAT: The rate of VAT in the current Tax Code is 20%. VAT taxpayer registration threshold is 4 000 000 som, and 5 000 000 for baking industry. A number of sectors is exempt (listed in Table 1), and a zero-rate is applied to exports of goods and services, international shipping, and processing of goods under customs regime.

- Baseline Period. Traditionally, revenue estimates should compare a forecast of tax revenues from the changed tax base to a mid-term baseline scenario. However, it appeared convenient for the purposes of this study to base all estimates on the 2007 baseline (with a second option of 2008 for EPT). First, it was not feasible within the scope of this assignment to develop an econometrically estimated set of revenue functions and analyze the relationships between the three taxes and macroeconomic indicators so that mid-term estimates could be sufficiently integrated with the corresponding macroeconomic forecast. Secondly, it was preferable to estimate PIT impact on 2007 baseline because of the need to analyze its effect on regional revenue and wealth distribution. It made reasonable to choose this period for other taxes as well to make estimates comparable. Finally, 2007 and 2008 baseline estimates made it possible to compare estimation results to official revenue estimate for the change in this tax, provided by the Ministry of Finance for 2007 and 2008.

Proposed Change

Major changes proposed by the PTC are outlined below:

    - PIT: PTC introduces a Minimum Computed Income, implying that taxpayers falling below this threshold would be liable to 10% of MCI regardless of how small is their income. It also introduces a deduction for expenses on education and non-state pensions, and restricts the mortgage deduction to interest payments only.

    - EPT: The rate is not changed. However, it introduces changes into the list of allowable deductions from taxable profit (Since the PTC abolishes the Emergency Tax and the Road Tax; therefore, both deductions are automatically removed; and four new deductions are introduced for payments of four other taxes: Sales Tax, Property Tax, Tax on Used Subsurface, and non-creditable VAT).

    - VAT: The biggest change is a reduction of VAT rate from 20% to 12%. One other palpable change is exemption of exports in services, which is currently zero-rated. Apart from this, there is not much structural change for this tax. The PTC leaves the threshold unchanged (except for baking industry); and slightly reshuffles allowable deductions and zero rates (some removed; some introduced).

Motivation

Proposed changes were designed on the basis of the mid-term strategy for tax policy in Kyrgyz Republic for 2006-2008. The overall goal of this strategy was to reduce overall tax burden, stimulate international trade and investment, and better tax administration.

The strategy also referred to other policy goals and principles such as: importance of indirect taxation; the need to legalize unreported incomes and stimulate economic behavior for investment and growth. However, the strategy does not contain more detailed policy intentions for any of the three taxes which change significantly in the PTC.

Methodology

This analysis estimates revenue impact individually for the three taxes: PIT, EPT and VAT. Estimation approaches are described in detail in methodological annexes attached for each tax.

An estimate which combines these changes based on a more complex multi-sector model and based on alternative scenarios for provision stacking was not feasible within this assignment but could be developed in future as a follow up to this work.

Estimated Revenue Effect

- The study produced the following estimates of fiscal and distributional effects by individual taxes:
  - PIT: The overall expected revenue impact of PIT provisions in the PTC will be a 22% revenue increase. It differs in principle from the official estimate which does not predict any change in revenue from this tax.

    The major effect of proposed PIT provisions will be distributional. Introduction of the MCI seems to be a strongly regressive measure, increasing tax burden on the poorest. Moreover, these results are highly disproportional across the regions. Therefore, some of the predicted growth will be offset by civil servant expemption (overall and by individual regions). However, the adjusted increase in tax burden will be fully taken by other poorest taxpayers, whose relative wealth compared to civil servants with similar income will be reduced.

    Because PIT is included into the basket of revenues which participates in intergovernmental fiscal equalization formula, regional disproportions in estimated revenue impact might disturb the existing equalization system.

    Another finding is that the reform will significantly increase effective tax burden on recipients of remittances from international labor migrants. Essentially, the new proposal will be a hidden tax on remittances. This analysis implies that despite the seeming regressivity of the proposed new system of PIT taxation, there is some evidence that the resulting distribution will be fairer than it seems, because of how it is linked to regional distribution of remittance income.

  - EPT: Simulations predict a 21.87% decrease in EPT revenue compared to 2007 baseline, and 18.78% decrease compared to 2008 baseline. Predicted decrease is bigger than official estimate (-15.66%), if calculated with 2007 baseline, and smaller than official estimate (-24.01%), if calculated with 2008 baseline.

    These findings assume that there would be no shifts between regular and simplified taxation systems. They also do not account for a significant possibility that the EPT tax base will be eroded with tax minimization through pseudo-reinsurance payments which is likely after PTC introduces direct taxation of profits for insurance companies.

- <u>VAT</u>: Since the biggest change in the PTC is a major reduction in VAT rate, and there is almost no other significant structural change proposed, the basic approach is to estimate overall revenue reduction by applying the new rate to the 2007 baseline tax base. These straightforward calculations leading to a 40% reduction estimate are provided in Table 4, which also compares them to official estimates (of -32.3%, adjusted for inflation).

  Assessing further possible effects of VAT reform (such as structural changes resulting from changed treatment of exports in services, distributional effects and indirect multi-sector effects from changed demand for goods and production factors responding to changing prices) requires a full set of Household Expenditure Survey data and output-input data. At the same time, the report sets out a feasible and practical roadmap for a Partial Equilibrium Analysis which could be conducted when HES data is available at no extra charge.

Policy comments

- Estimated effects of proposed changes do not clearly link to the goals declared in the mid-term strategy for tax policy in Kyrgyz Republic.

- The PTC introduces a number of measures which are discouraging to people in Kyrgyz Republic who offer services on international markets. On the one hand, it introduces a hidden tax on migrant remittances, heavily shifted on the poorest. On the other hand, it abolishes VAT zero rate on the exports of services, making it exempt.

- Although the PTC notes the importance of indirect taxation, in reality, there is a movement away from indirect taxes: while the VAT rate is reduced, the PIT effective tax rate is raised for the poorest segments of taxpayers (which partially coincides with a de facto introduction of a hidden tax on remittances). This is against recommended practice as it may discourage investment resulting from remittances and have a negative effect on economic growth.

- The new version of the Sales Tax is not compatible with the declared strategic goals of supporting international competitiveness and business development. The PTC version of the Sales Tax make it essentially a turnover tax, levied at each stage of the production chain. Cascading this tax along all stages of production, without the option of a refund of tax paid on production supplies, will have a number of adverse effects. One of the strongest consequences will be discouragement of local private sector and its international competitiveness. Cascading tax liabilities will inevitably increase production costs of all businesses, including exporters. Moreover, given that imports will be taxed by Sales Tax only once at the entrance to Kyrgyzstan, while domestic goods will be taxed at each stage of production, local goods will become less competitive even on domestic markets compared to imported goods.

Annex 1. Personal Income Tax (PIT)

Description of Baseline

The current Tax Code applies a universal 10% rate to all taxpayers. It allows for all expenses on mortgages (both principal and interest) be deductible from taxable income.

Proposed Change

The proposed change would not affect the tax rate.

A summary of main provisions for change introduced by the draft PTC is provided in Table 1 and is outlined below.

▪ The Draft PTC sets a lower limit for the tax base by introducing a concept of "Minimum Computed Income" (MCI). Under this provision, the tax base can not be lower than MCI (minus standard deduction and minus social deduction), implying that taxpayers falling below this threshold would be liable to 10% of MCI regardless of how small is their income. The size of MCI varies across the 8 regions.

▪ The Draft PTC introduces two new deductions: for expenses on education (at no more than 10% of tax base before deductions) and for payments to non-state Pension Fund (at no more than 8% of tax base). However, it restricts the mortgage deduction to interest payments in the limit of 230 000 som per year.

Table 1. Summary of Proposal

Current Tax Code	Draft Proposed Tax Code (PTC)	Comment
Tax rate:	**Tax rate:**	**Tax rate:**
10%	10%	No change
Tax base:	**Tax base:**	**Tax base:**
	- The tax base can not be lower than minimum computed income (MCI) (minus standard deduction and minus social deduction), which is defined separately for each of the 8 regions; (not applied to civil servants)	- Standard deduction is 650 som per month, applied to taxpayers from all regions; - Social Deduction is 27% of income;
Deductions:	**Deductions:**	
	- expenses for education (no more than 10% of tax base before deductions)	
- all expenses (principal and interest) on mortgage	- interest on mortgage (no more than 230 000 som per year)	
	- payments to non state Pension Fund (no more than 8% of tax base)	

Motivation

Proposed changes were designed on the basis of the mid-term strategy for tax policy in Kyrgyz Republic for 2006-2008. The overall goal of this strategy was to reduce overall tax burden, stimulate international trade and investment, and better tax administration.

This strategy praised earlier PIT reforms which simplified the system of rates and brackets, helping to de-shadow a significant part of personal incomes. Describing future intentions, this strategy noted the concept of Minimal Computed Income, but without a clear specification of its policy tasks.

Methodology

Main tasks

Since the major change for PIT is the introduction of MCI, the revenue impact should arise from growing effective tax rate in the group of taxpayers falling below this threshold. This, in turn, is likely to have implications for wealth redistribution (shifting the burden toward taxpayers with lower declared income) and regional resource allocation (given that PIT is shared with local governments through a budget equalization formula).

Data limitations

To estimate all these effects, policy changes should be applied to detailed data on distribution of tax base, including its regional distribution. This type of microdata, collected through tax returns of individual taxpayers, would allow to perform microsimulations showing precise changes in demographic, economic and regional breakdown. However, tax base microdata for Kyrgyz PIT is not readily available.

Retrieving this information from household surveys is also problematic. Mainly, household interpretation of income could include types of income which are difficult to match with tax base or which are underreported. Moreover, these surveys collect aggregate household data without specifying income contributions by individual household members which would distort estimates based on individual taxpayers. Finally, household data does not contain sufficient regional breakdown.

Simulation of income distribution

On the other hand, absence of taxbase microdata is not unusual in CIS countries. A methodology to address this problem was suggested by John Thissen in 2002 to estimate revenue impact of PIT reforms in Ukraine[1] (further description of this approach is based on the paper referenced in the footnote).

This methodology uses a simulated income distribution function, which proved to closely fit actual income distribution in most countries. This simulated function plots taxable income against taxpayer ranked number if all taxpayers were ranked in descending order based on their income size, as shown in Diagram 1. Respectively, total taxable income is represented by the shaded area, which is a sum of individual incomes of all ranked taxpayers[2].

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[1] *Evaluation of Rates and Brackets in the Personal Income Tax of Ukraine*, Budget and Fiscal Review, June 2002 (By Natalie Leschenko and John Thissen, Support for Economic and Fiscal Reform Project / Development Alternatives, Inc (DAI) funded by the United States Agency for International Development (USAID)).

[2] Once Household Expenditure Survey data is available, it will be possible to estimate the wellness of fit for this function by comparing it to income data from the survey, as it was done for Ukraine in the original methodological paper.

Mathematically, the function is described as:

$$f(n) = -\left(\frac{Y^T}{N}\right)\ln\left(\frac{n}{N}\right),$$

(1)

where N is the total number of taxpayers, n is the rank of individual taxpayer, and Y^T is the total taxable income. This function allows us to identify with sufficient precision how many taxpayers would fall under various tax brackets, including the groups created by the MCI threshold, and what would be their taxable income.

To identify total taxable income, which corresponds to the total shaded area in Diagram 1, we can transform the income distribution function (1) into equation (2), which could be resolved for Y^T:

$$Y^T = \int_o^N -\frac{Y^T}{N}\ln\left(\frac{n}{N}\right).$$

(2)

Further, if different rates are applied to different income brackets, it is possible to use these equations to break down the total taxable income into sums of income earned by taxpayers in specified brackets. For example, as illustrated in Diagram 2, if we have one threshold dividing taxpayers above and below Ui (say, the MCI), total taxable income Y^T will be equal to a sum of blue and green shaded areas.

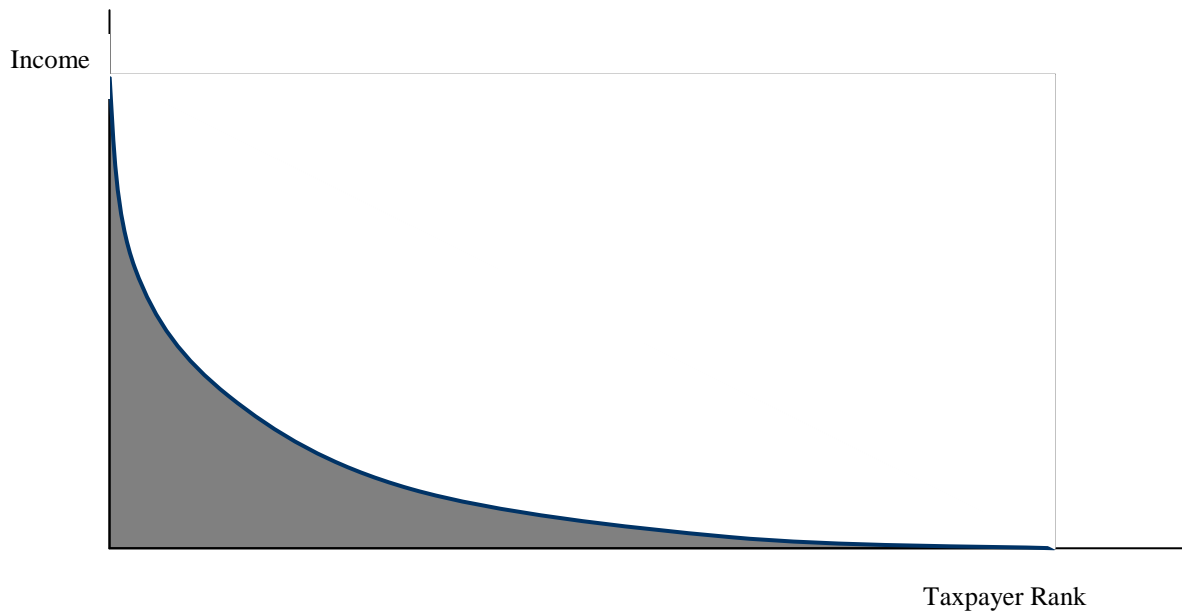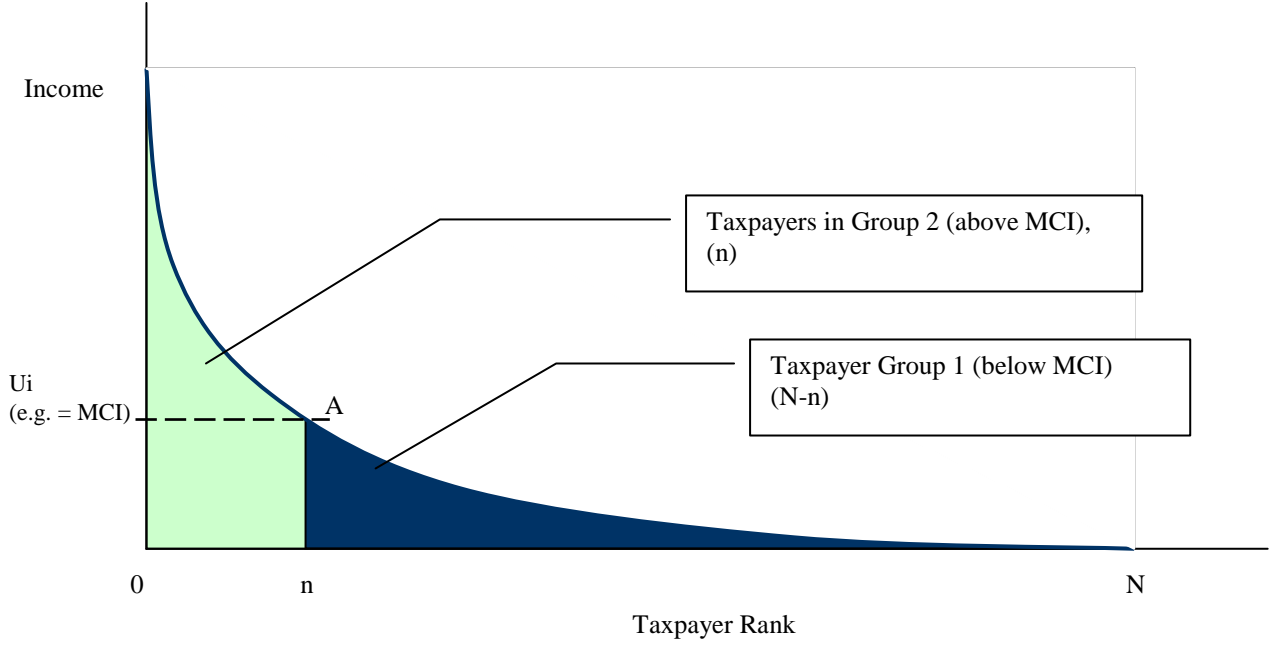**Diagram 1. Simulated income distribution function $f(n)$**

Diagram 2. Taxable income Y^T as a sum of total income in two brackets

Income

Taxpayers in Group 2 (above MCI), (n)

Taxpayer Group 1 (below MCI) (N-n)

Ui
(e.g. = MCI)

A

0   n   N

Taxpayer Rank

Mathematically, each of these areas (e.g. area *i*) will be described as:

$$Y^T_{green} = Y^T * \left(e^{\frac{N}{Y^T} u_{U green}} - e^{\frac{N}{Y^T} u_{L green(MCI)}} \right) + n * u_{L_{green}(MCI)}, \qquad \text{(Green area, Group 2) (3)}$$

$$Y^T_{blue} = Y^T * \left(e^{\frac{N}{Y^T} u_{U blue(MCI)}} - e^{\frac{N}{Y^T} u_{L blue(0)}} \right) - n * u_{U_{blue}(MCI)} \qquad \text{(Blue area, Group 1) (4)}$$

Where U_{Ui} and U_{Li} are the upper and lower tax brackets.

With these equations at hand, it is possible to make various comparisons for proposed changes against baseline. In particular, it is possible to identify expected chance in revenue collection, overall and by brackets, by applying respective tax rates to calculated sizes of taxable incomes, and the number of taxpayers falling into each bracket.

This methodology is very convenient to analyze proposed PIT provisions. First, it allows assessing both revenue impact and distributional implications of introducing. Secondly, since data on actual PIT collection and number of taxpayers is available in regional breakdown, it is possible to identify revenue impact and distributional effect individually for each region.

Key assumptions

1. Baseline period left at 2007. Traditional approach to estimation of revenue impact would require comparing revenue dynamics expected after the introduction of PTC to a mid-term baseline revenue forecast.

   However, making such estimates would represent a considerable difficulty for this analysis. A full-scale forecast, broken down by regions, would require regionally representative sample of microdata on individual tax returns.

Simpler methods (basic extrapolation or analysis of revenue income elasticities) would be problematic. Since data on the history of PIT collection by individual regions is not available, any forward projections would automatically lose regional breakdown.

As already discussed, it is expected that the major impact of proposed provisions will result from a changed treatment of taxpayers with lowest declared income. To avoid neglecting distributional and regional effects, all simulations in the model are performed on the latest available PIT collection data and MCI (2007) and the latest available data on the numbers of taxpayers (2006).

2. <u>MCI exemption for civil servants is outside the model.</u> As mentioned earlier, the newly introduced MCI would not be applied to civil servants. Although we know the numbers of such taxpayers by regions, there is no information on their income distribution, even though it should be expected that most of them would fall below the MCI threshold. However, without more precise data, it difficult to include this factor into the model, which therefore ignores this provision.

At the same time, it has to be noted, that the share of such taxpayers is significant (see Table 2) and, given their intuitively poorer profile, it means that the number of taxpayers liable to the new MCI (and estimated revenue increase) will probably be somewhat lower than predicted by the model.

However, the presence of significant number of "MCI-exempt" taxpayers in the poorer bracket will also increase relative tax burden on other poorer taxpayers, which work outside budget institutions (and thus exacerbate distributional effects).

3. <u>Simplified taxation (patent) is outside the model.</u> Voluntary patent is an alternative, simplified income taxation system which does not have an upper income ceiling but which has a number of other, administrative restrictions for entry (such as restricted list of eligible activities, limited number of employees etc). The size of the patent payment (which replaces the PIT for volunteering taxpayers) is an inflation-indexed lump sum.

There is no data on the history of changes in the number of patent payers, but we can get an indirect estimate of this dynamics from the changes in patent collections as a share of PIT revenues. As shown in Table 3, this share has been relatively stable over 2003-2007. This might imply that, for some reason, the amount of patent payers was not changing significantly during these years.

However, this system might become more popular among poorer taxpayers after the introduction of MCI, which might decrease PTC revenue impact.

4. <u>The model does not include the new deduction for expenses on education.</u> The model does not reduce amounts of tax base to reflect the provision which allows to deduct education expenses. According to Household Expenditure Survey (HES), such expenses do not represent a significant share of household spending (in average, less than 2% for a household). We assume that this provision will not have a palpable effect on overall revenue impact or wealth redistribution.

Table 2. Numbers of civil servants by regions (2006)

	Total number of Taxpayers	Share of Civil Servants (%)	Number of Civil Servants				
			Total	Government	Education	Health Care	Social Services
Batken oblast	18,208	62%	11,236	3,947	1,911	4,896	482
Jalalabat oblast	70,531	63%	44,186	6,196	26,540	9,599	1,851
Issykkul oblast	39,764	57%	22,667	5,700	10,440	4,883	1,644
Naryn oblast	21,665	76%	16,398	3,210	9,170	2,799	1,219
Osh oblast	45,888	85%	38,987	3,958	25,789	7,559	1,681
Talas oblast	16,094	76%	12,239	2,403	6,732	2,310	794
Chui oblast	73,574	43%	31,961	6,130	15,832	7,295	2,704
Bishkek city	173,233	47%	81,206	17,501	32,066	15,931	15,708
Osh city	35,989	58%	21,039	2,476	11,181	5,344	2,038
Total	**494,946**	**57%**	**279,919**	**51,521**	**139,661**	**60,616**	**28,121**

Table 3. PIT and Patent Collections in 2003-2007 (thou som)

	2003	2004	2005	2006	2007
Revenues from PIT	1,208,003	1,442,885	1,744,163	1,820,329	2,322,915
Revenues from Patent Tax	228,455	304,844	335,979	377,994	429,312
Share of Patent tax in PIT revenues	**19%**	**21%**	**19%**	**21%**	**18%**

5. <u>The model does not allow for a change in treatment of mortgages.</u> Deduction for mortgages exists in current legislation. At the moment, it covers both principal and interest payments,. The PTC will limit this deduction, by allowing to deduct expenses only on interest payments and in amount lower than 230 000 som per year.

   This deduction is also left outside the model. According to HES, total household expenditures on all kinds of loans take only very insignificant share of household spending (1.5% in average), which means that amounts of interest on mortgages is probably even lower. We assume that this provision will not have a palpable effect on overall revenue impact or wealth redistribution.

6. <u>The model does not include the new deduction for expenses on non-state pensions.</u> The PTC allows to reduce taxable income by amounts of payments to non-state pension funds. However, based on indirect evidence from expert surveys and analysis published in the media, the size of non-state pension funds is very small. According to these sources, there are currently about 2000 contributors to non-state pension funds, which represents about 0.4% of all taxpayers[3]. We assume that this number will not increase immediately if the deduction is introduced, and therefore neglect it within the model.

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[3] *Statement of the Non-State Pension fund "Kyrgyzstn" board;* by Sh.Atahanov (http://www.npf.kg/)*; We Do Not Imagine Ourselves Without Partnership,* interview with Sh.Atahanov, *Magazinin-3000* newspaper (http://www.npf.kg/stat_02.html), *How Do We Work for You* (History and Operational Rules of the Non-State Pension Fund "Kyrgyzstan", http://www.npf.kg/activity.html).

Methodological issues related to remittances

<u>Importance of remittances</u>

Migrant remittances significantly influence the size and distribution of wealth in Kyrgyzstan. About 15.8% of households receive remittances, in average representing half of their annual income. Total inflow of direct remittances to households in 2006 was estimated at USD 253 million. The average size of remittances per capita was approximately 2 853 som per year, with average per capita income excluding remittances at 17 721 som per year (NB: which is significantly lower than average MCI).

The ADB survey[4] has found that poorer, especially rural households, were likelier to have relatives working abroad, and their remittance income was relatively more important as a wealth factor.

The study also found that remittances could be such an important wealth factor for households, that they can completely change the relative position of these households in the overall income distribution (E.g. about 83% of remittance recipients in the poorest quintile would not be classified as such if remittances were included. On the other hand, if we included remittances, the richest quintile, its share of remittance recipients would increase by 69%).

<u>Expected influence on revenue buoyancy and tax incidence related to proposed reforms</u>

1. The major effect will be related to introduction of minimal computed income. Given that remittances are likelier and most prevalent among poor (rural) households, it will be likely for remittance recipients to fall below the MCI threshold and become eligible to increasing effective tax rate. However, given the importance of remittances for such households, the actual increase in effective tax burden is not immediately clear.

2. This effect will differ by regions (depending on the combination of regional distribution of remittance flows and the sizes of regional MCIs).

3. It is unlikely that remittances will effect proposed introduction of deductions of expenses on education. The ADB study found that overwhelming part of remittance receipts (78.4%) is spent on basic consumption; education expenditures are very low (at 0.6-1.3% combined with healthcare) and are not significantly different from households which do not receive remittances.

4. It is also unlikely that remittances will effect proposed introduction of deductions of expenses on non-state pensions. According to ADB study, recipients of remittances are much likelier to make savings for future but these savings are held almost exclusively in cash. Non-cash savings represent only 0.3% of total funds saved which is exactly the same as for non-recipient households.

5. Theoretically, proposed change in treatment of mortgage expenses is likely to be a disadvantage to remittance recipients compared to non-recipients. According to ADB study, remittances increase propensity of households to invest into real estate and construction: the share of savings used on purchases of housing and other investment into real estate was 13.6%% (percentage points) higher among recipients of remittances compared to non-recipients.

6. Remittances will should not affect estimated revenue impact of proposed changes. Although most of them are made through official channels, we assume that most of them are not declared as taxable income.

7. The ADB study found that the size and prevalence of remittances started to decrease. Therefore, any influence they currently have on potential reform impact are likely to soften in the medium term.

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[4] *International Remittances and Poverty in Kyrgyz Republic* (a report within the Study of international remittances in Central Asia and South Caucasis), Asian Development Bank.

<u>Treatment of remittances in estimation model</u>

The analysis above shows that remittances should not affect revenue impact of proposed changes. However, they might affect the impact of proposed changes on relative wealth distribution between households who receive and do not receive remittances income.

Therefore, the major task for the estimation exercise related to remittances is to show the direction of changes in tax incidence among recipients and non-recipients of remittances which should be expected from introduction of minimum computed income.
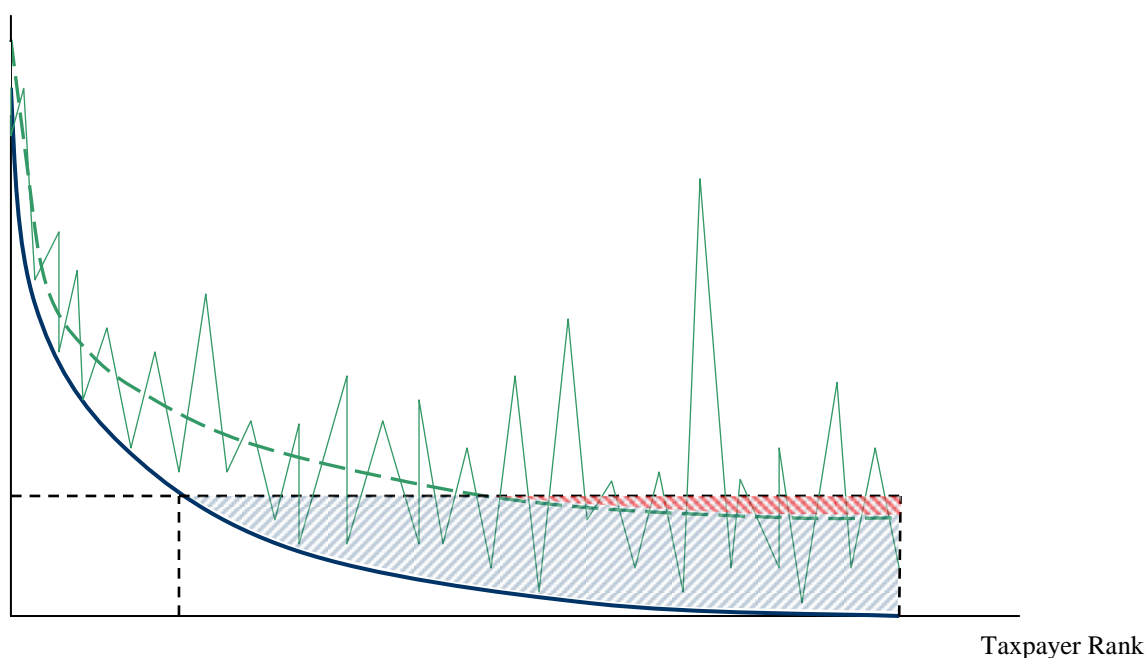
The main model used in the study is primarily a revenue estimation tool and is not precisely designed to analyze specific tax incidence issues. Given that microdata on household income are not readily available, the estimation model used in this study is based on simulated income distribution function which does not distinguish between individual sources of household income. Therefore, this model will define taxpayers whose tax liabilities would increase because of MCI, without showing whether those taxpayers receive remittances or not.

In other words, as shown on Diagram 3, the actual household income is probably closer to the green dotted line that the blue distribution line used in the model. We know that the actual income line is probably higher and less skewed to the left because, according to the ADB study, poorer rural households are likelier to receive remittances. However, we also know that the size of remittances for some rural taxpayers is high enough to shift them into highest quintiles in income distribution.

Clearly, because of higher likelihood of remittances in poorer households, the reform will increase tax burden on remittance recipients compared to non-recipients (because most recipients would fall below MCI). The model will identify increasing tax revenues by regions, and therefore it will automatically indirectly show in which territories the burden on remittance recipients will be growing.

Diagram 3 also illustrates that the additional tax burden created by the MCI for poorer taxpayers might be lower in reality because of remittances. The additional taxable income implied by the MCI is the blue shaded area above declared income distribution line and below the MCI threshold. If we estimated tax burden based on taxable income *with* remittances, it would be represented by the red shaded area (between the simulated greed dotted line and the MCI). As the Diagram shows, this adjusted estimate of growing burden is likely to be much smaller (and fairer).

Diagram 3. Simulated distribution of taxable income with and without remittances

Taxpayer Rank

Simulation exercise and estimated revenue effect

<u>Input data and supplementary calculations</u>

Tables 4-5 provide reference data for key variables participating in the model. Actual PIT revenues for each region are adjusted to exclude revenues from patent tax (Table 4). Table 5 explains the composition of the Minimum Computed Income (MCI) which is used in the model as a threshold between two groups of taxpayers: it is also adjusted to exclude the standard deduction and deduction to social funds.

Table 4. Reference input data:
Baseline PIT collections by regions

	Actual PIT Revenue, 2007			Number of Taxpayers, 2006
	Total PIT	Patent Payments	PIT less Patent (= Baseline)	
Batken oblast	74,455,700	7,664,900	**66,790,800**	18,208
Jalalabat oblast	193,912,000	18,566,100	**175,345,900**	70,531
Issykkul oblast	185,011,200	18,828,300	**166,182,900**	39,764
Naryn oblast	43,797,600	4,932,700	**38,864,900**	21,665
Osh oblast	116,519,300	41,684,100	**74,835,200**	45,888
Talas oblast	45,286,800	7,424,800	**37,862,000**	16,094
Chui oblast	324,706,700	44,783,900	**279,922,800**	73,574
Bishkek city	1,197,815,000	260,577,100	**937,237,900**	173,233
Osh city	135,942,600	24,850,500	**111,092,100**	35,989
Total	**2,317,446,900**	**429,312,400**	**1,888,134,500**	**494,946**

Table 5. Reference input data:
Composition and regional values of MCI

	Average annual salary	Gross MCI	Deduction to Social Funds	Standard deduction (=650*12)	Net MCI (Gross less deductions)
Batken oblast	33,407	33,407	9,020	7,800	**16,587**
Jalalabat oblast	39,625	39,625	10,699	7,800	**21,126**
Issykkul oblast	32,929	32,929	8,891	7,800	**16,238**
Naryn oblast	40,849	40,849	11,029	7,800	**22,020**
Osh oblast	26,166	26,166	7,065	7,800	**11,301**
Talas oblast	30,547	30,547	8,248	7,800	**14,499**
Chui oblast	45,226	45,226	12,211	7,800	**25,215**
Bishkek city	68,704	68,704	18,550	7,800	**42,354**
Osh city	44,502	44,502	12,016	7,800	**24,686**
Average	**40,217**	**40,217**	**10,859**	**7,800**	**21,559**

To apply the new treatment of taxpayers below the threshold, we need to identify the number of such taxpayers and the overall baseline tax base. Table 6 shows the results of these calculations based on the simulated income distribution function. It shows that the net MCI threshold divides taxpayers into two almost equal parts (half of the taxpayers below and half of the taxpayers above the MCI).

Table 6. Defining Supplementary Baseline Variables

| | Taxable Income (Baseline PIT / 10%) | Current breakdown of taxpayers (baseline scenario) | | |
		Group 2 Taxpayers Above Threshold (= n)	Group 1 Taxpayers Below Threshold (=N-n)	Total
Batken oblast	667,908,000	11,585	6,623	18,208
Jalalabat oblast	1,753,459,000	30,152	40,379	70,531
Issykkul oblast	1,661,829,000	26,962	12,802	39,764
Naryn oblast	388,649,000	6,348	15,317	21,665
Osh oblast	748,352,000	22,948	22,940	45,888
Talas oblast	378,620,000	8,690	7,404	16,094
Chui oblast	2,799,228,000	37,923	35,651	73,574
Bishkek city	9,372,379,000	79,186	94,047	173,233
Osh city	1,110,921,000	16,175	19,814	35,989
Total	**18,881,345,000**	**239,969**	**254,977**	**494,946**

Estimated Absolute Revenue Change

The main results of the estimation exercise are summarized in Table 7.

First, it shows that the overall expected revenue impact of PIT provisions in the PTC will be a 22% revenue increase. It should be stressed that this estimate does not include the exemption from MCI threshold provided to public servants, who represent about 63% of all tax paying labor force. If public servants were included, the estimated revenue impact would have been lower. At the same time, as discussed in model assumptions, although the MCI exemption for public servants softens the overall revenue impact, it amplifies the regressive distributional effect of MCI, shifting relative tax burden on poorer taxpayers working outside civil service.

Table 7. Summary of Simulation Results

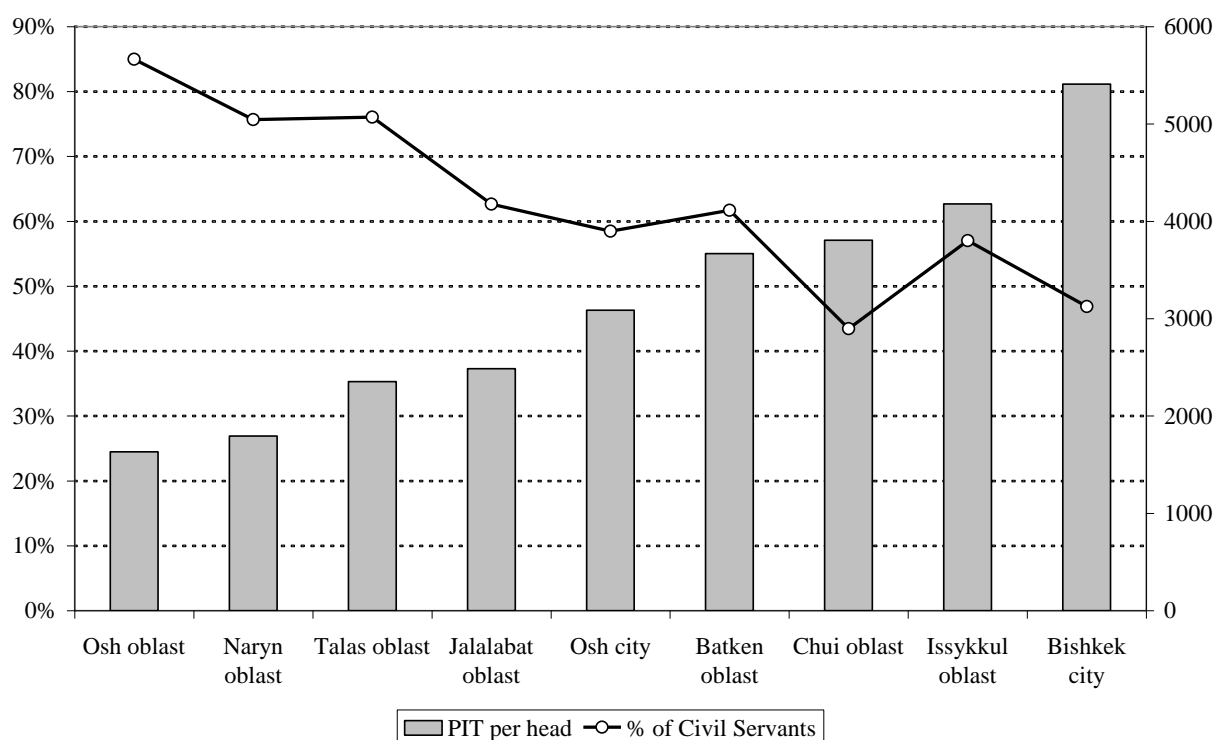| | **ESTIMATED CHANGE** | | | | | | Share of Public Servants |
| | Tax Revenue | | | Share of Taxpayers in the Group | | | |
	Total	Group 1 (Below MCI)	Group 2 (Above MCI)	Group 1 (Below MCI)	Group 2 (Above MCI)	PIT per head	
Batken oblast	**9%**	116%	0%	36%	64%	3,668	62%
Jalalabat oblast	**28%**	133%	0%	57%	43%	2,486	63%
Issykkul oblast	**7%**	114%	0%	32%	68%	4,179	57%
Naryn oblast	**52%**	150%	0%	71%	29%	1,794	76%
Osh oblast	**19%**	126%	0%	50%	50%	1,631	85%
Talas oblast	**16%**	123%	0%	46%	54%	2,353	76%
Chui oblast	**18%**	125%	0%	48%	52%	3,805	43%
Bishkek city	**24%**	130%	0%	54%	46%	5,410	47%
Osh city	**25%**	130%	0%	55%	45%	3,087	58%
Total	**22%**						

Distributional Implications

As expected, the major effect of proposed PIT provisions will be distributional. **Introduction of the MCI seems to be a strongly regressive measure, increasing tax burden on the poorest.** Even from the first glance (in Table 5), the average annual net MCI is defined at 21 559 som, which is about 20% higher than 17 721 som of average income reported by the ADB survey of household expenditures, quoted earlier. Table 7 with simulation results confirms that tax revenue collected from taxpayers with income below the MCI will grow by 127% in average.

Moreover, these results are highly disproportional across the regions. In four regions, expected revenue growth in the poorer segment and the overall revenue impact is much higher than average (Jalalabat, Naryn, Bishkek and Osh).

As discussed earlier, these results do not take into account the MCI exemption for civil servants. It is impossible to understand how exactly exempt civil servants will affect the model because there is no data on their income distribution. However, there is some evidence to confirm an intuitive assumption that most of civil servants fall below MCI threshold. Diagram 4 plots the share of civil servants in total labor force in each region against actual PIT collections per head. It shows that the more taxpayers work in civil service, the less income tax this region contributes to the budget, implying that wages in the civil service are lower than in other sectors. **Therefore, some of the predicted growth will be offset by civil servant expemption (overall and by individual regions). However, the adjusted increase in tax burden will be fully taken by other poorest taxpayers, whose relative wealth compared to civil servants with similar income will be reduced.**

Diagram 4. Estimated Revenue Changes by Regions
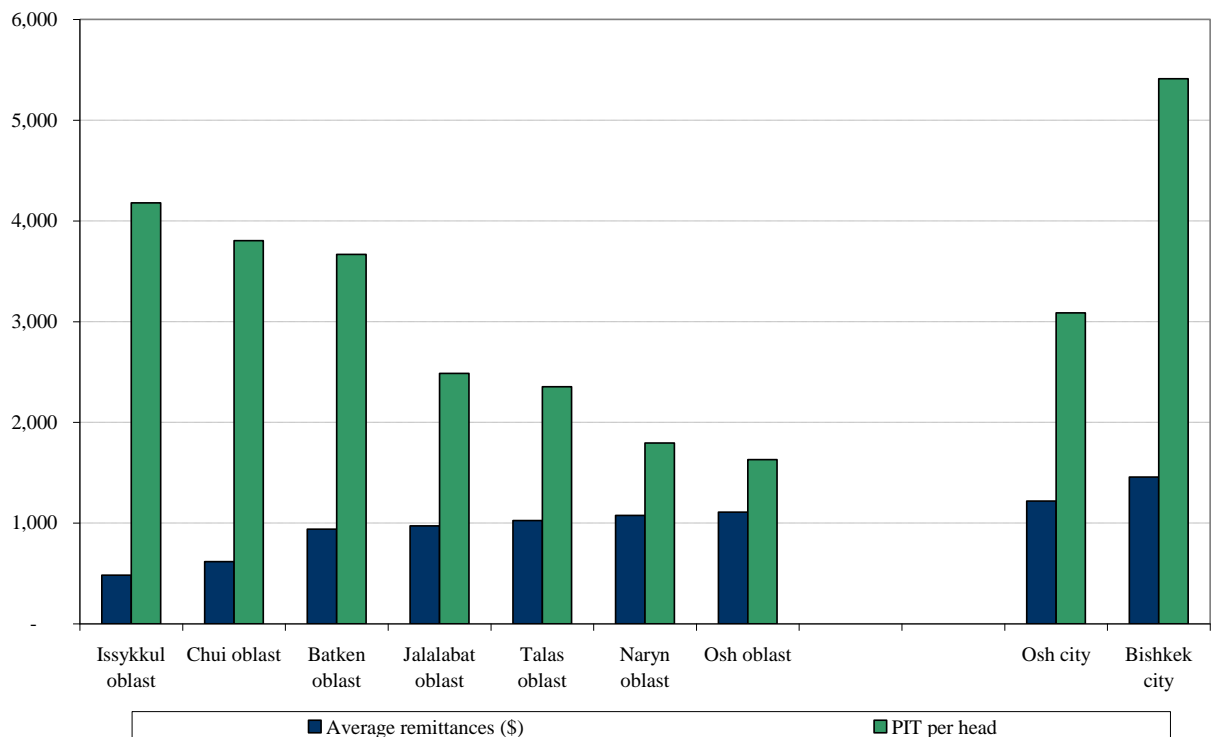

Regional Considerations

Because PIT is included into the basket of revenues which participates in intergovernmental fiscal equalization formula, **regional disproportions in estimated revenue impact might disturb the existing equalization system**. As shown in Table 7, such disproportions will probably be significant. Expected increase in tax revenue varies from 7% in Issykkul oblast to 52% in Naryn. It might be necessary to consider amendments to the current transfer allocation mechanism to reflect these distortions.

<u>Impact of Remittances</u>

One clear implication from the analysis based on remittances data conducted by the ADB is that the reform will significantly increase effective tax burden on remittance recipients. **Essentially, the new proposal will be a hidden tax on remittances.**

Diagram 5 shows that there is a tendency for oblasts which receive highest per capita remittances to be the weakest contributors of per capita PIT (apart from exceptional cases of the cities Osh and Bishkek). This provides additional evidence to expect that growing effective rate on the PIT taxpayers in the lowest income bracket is likely to target remittance recipients. This analysis implies that despite the seeming regressivity of the proposed new system of PIT taxation, there is some evidence that the resulting distribution will be fairer than it seems, because of how it is linked to regional distribution of remittance income.

Diagram 5. Remittances and PIT by Regions

Average remittances ($)   PIT per head

Annex 2. Enterprise Profit Tax (EPT)

Description of Baseline

Under the current Tax Code, enterprise profit is taxed at 10% rate. The Tax Code allows enterprises to deduct from their taxable profit their payments of Emergency Tax and Road Tax.

Proposed Change

The draft PTC would not affect the tax rate. However, it introduces changes into the list of allowable deductions from taxable profit.

A summary of main provisions for change introduced by the draft PTC is provided in Table 8 and is outlined below.

- The draft PTC abolishes the Emergency Tax and the Road Tax; therefore, both deductions are automatically removed. This change extends the EPT tax base by amounts of respective tax payments which can no longer be excluded from taxable profit.

- The draft PTC introduces four new deductions for payments of four other taxes: Sales Tax, Property Tax, Tax on Used Subsurface, and non-creditable VAT. The Sales Tax and Used Subsurface Tax exist in the current Tax Code but would be modified by the PTC. The Property Tax exists in the current Tax Code, but is not actually levied: the PTC intends to start doing it in practice. All these new deductions will reduce the EPT tax base.

Table 8. Summary of Proposal

Current Tax Code	Draft Proposed Tax Code (PTC)	Comment
Tax rate:	Tax rate:	Tax rate:
10%	10%	No change
Deductions:	Deductions:	Deductions:
Payments of Emergency Tax	-	This tax is abolished. Automatic removal of this deduction will extend the EPT tax base.
Payments of Road Tax	-	This tax is abolished. Automatic removal of this deduction will extend the EPT tax base.
	Payments of Sales Tax	This is an existing tax which would be modified by the PTC. It reminds Emergency Tax, but has a wider tax base and higher tax rate. The deduction will reduce the EPT tax base.
	Payments of Property Tax	This new deduction reflects the PTC intention to start administering the Property Tax (which technically existed earlier but was not actually levied). The deduction will reduce the EPT

		tax base.
	Payments of Tax on Used Subsurface	This is an existing tax which would be modified by the PTC. The deduction will reduce the EPT tax base.
	Payments of VAT which is not creditable	Non-creditable VAT includes VAT payments on goods and services which do not participate in the production process. The deduction will reduce the EPT tax base.

Motivation

Proposed changes were designed on the basis of the mid-term strategy for tax policy in Kyrgyz Republic for 2006-2008. The goal of this strategy was to reduce overall tax burden, stimulate international trade and investment, and better tax administration.

Among specific tasks related to enterprise profit taxation, the strategy listed "encouragement of economic activity" and "legalization of actual business profits". As earlier measures to achieve this task, the strategy listed a committed policy to decrease the EPT tax rate (from 30% in 2002 to universal 10% in 2007), introduction of simplified business taxation system, which both helped to significantly extend the tax base despite slight decrease in overall nominal EPT revenues. The strategy did not explain which further steps will continue to address this challenge.

Methodology

Main task

The key task in this exercise is to replicate proposed changes to the tax base by removing amounts which would no longer be deductible, and by adding amounts of new tax payments which are allowed for deduction by the PTC.

Choice of the baseline period

This study provides EPT revenue estimates for two baseline periods: simulated impact for 2007 and 2008. This choice of period is based on the following considerations:

- Traditionally, such estimates should compare a forecast of tax revenues from the changed tax base to a mid-term baseline scenario. Unfortunately, the furthest official macroeconomic forecast available to this analysis is only for 2008 (there is a possibility that a forecast to 2011 also exists but it was not possible to check or access). A longer-term forecast would therefore require developing alternative macroeconomic projections, which is beyond the technical scope of the current exercise.

- At the same time, estimates of revenue impact compared to 2008, and even 2007 baseline, have a number of advantages. First, they would be comparable to the PIT estimates conducted with 2007 baseline because of the need to analyze its effect on regional revenue and wealth distribution. Secondly, they would be comparable to official revenue estimate for the change in this tax, provided by the Ministry of Finance for 2007 and 2008.

Approach

- To estimate the overall revenue impact, we start by defining the EPT tax base for each of the baseline years (official revenue collection data [2007 actual / 2008 forecast], reduced by amounts of unified tax collections, multiplied by 10% tax rate).

- To simulate proposed removal of deductions for payments of Emergency and Road Tax, we add official estimates of these payments (revenue collections of these taxes in 2007 and forecasted collections for 2008) to the tax base numbers for each year.

- To simulate proposed introduction of deductions for payments of Sales Tax, Property Tax and the Tax on Used Subsurface, we decrease the tax base by official estimates of collections from these taxes. Because these taxes are new, the estimates are for 2008. Therefore, we adjust it for inflation to apply to 2007.

- We assume that deducted payments of non-creditable VAT will not be significant and do not include them into simulations.

- Revenue impact is calculated for both years by applying the unchanged tax rate to the simulated sizes of the tax base, and is compared to official estimates provided by the Ministry of Finance.

Key assumptions

- Accuracy of official estimates. Simulation results depend on the accuracy of official estimates for the new tax collections, which are used to adjust the tax base.

- Complications related to Sales Tax. The PTC version of the Sales Tax is essentially a turnover tax, levied at each stage of the production chain. It means that this tax will cascade along all stages of production, affecting calculations of tax deductions for each stage. The overall size of resulting deduction for payments of this tax depends on the number of stages in the chain and is a very complex variable to estimate. In view of this difficulty, it should be reinforced that this model relies on the accuracy of official estimate of sales tax revenues, which is likely to undershoot given the cascade nature of this tax.

- Impact of Simplified Business Taxation system (Unified Tax). There is a theoretical possibility that the number of EPT taxpayers will be changing as businesses switch between general taxation and an alternative simplified system. The PCT does not have any provisions which should stimulate such shifts (it leaves the simplified system unchanged). However, the shifts may result from other exogenous factors.

  The share of Unified Tax revenues in EPT collections has been steadily growing during 2003-2007, as shown in Table 9. However, there is no information on the number of taxpayers for either system, which does not allow to judge whether any shift is taking place. Still, collection data shows that Unified Tax is a palpable factor, and that its receipts are growing faster than EPT.

  This factor is not included into the EPT estimation exercise and should be kept in mind in interpretation of resulting revenue estimates.

Table 9. History of EPT and Unified Tax Collections, 2003-2007 (thou som)

	2003	2004	2005	2006	2007
Revenues from EPT	913,138	918,569	1,283,151	1,191,576	1,343,778
Revenues from Unified Tax	8,914	16,346	26,676	40,685	55,980
Unified Tax as % of EPT Revenues	**1.0%**	**1.8%**	**2.1%**	**3.4%**	**4.2%**
Change over previous year, EPT		0.6%	39.7%	-7.1%	12.8%
Change over previous year, Unified Tax		83.4%	63.2%	52.5%	37.6%

- Impact of provisions on taxation of insurance companies.

  Taxation of profits in insurance sector is in the middle of a significant reform in Kyrgyz Republic.

Current legislation taxes insurance companies through a simplified system, applying a 5% rate to their gross revenue (and allowing other businesses to deduct insurance expenses from taxable profit). This system is very conducive to tax minimization because it allows to transfer taxable profits to captive insurance companies (as pseudo insurance payments) and to have them taxed at a twice lower rate.

PTC plans to include insurance sector into the general system of enterprise profit taxation, with a general tax rate of 10% on their profit. This would be a very positive step, significantly reducing possibilities for tax evasion. However, it is likely that other options for manipulation, specific for insurance sector, will be opened by the PTC.

One such option might be created by tax treatment of reinsurance payments. The PTC does not specify how insurance profits would be calculated for taxation purposes, but it is likely that insurance companies would receive a deduction for their reinsurance payments. Although this is perfectly logical in terms of tax policy, it can create a big revenue leakage in a weak regulatory and administrative environment. Insurance companies may collude with offshore reinsurers to escape taxation altogether through pseudo-reinsurance payments, as it is already happening on a very large scale in other CIS countries, e.g. Ukraine.

It is nearly impossible to predict the scale of tax minimization through reinsurance because it depends primarily on the strength of regulatory control. However, the pessimistic scenario under weak control measures could lead to very significant erosion of the EPT tax base and to a significant loss of budget revenue. This possibility is left entirely outside the simulations in this model and should be kept in mind in interpreting simulation results.

Simulation Exercise and Estimated Revenue Effect

Input data

Table 10 describes, for reference, official statistics for collections of revenue sources in the calculations in 2007, as well as official revenue forecasts for 2008 and official estimates for 20008.

Table 10. Official revenue data (2007 actual, 2008 forecast), (thou som)

	2007 (actual)	2008, Current TC (official forecast)	2008, New TC (official estimate)
EPT revenues	1,343,782	1,666,000	1,266,000
Including: Unified Tax	55,980	72,000	72,000
Road Tax (+)	636,000	721,000	0
Emergency Tax (+)	1,277,196	1,569,392	0
Sales Tax (-)	1,121,235	1,468,000	4,245,000
Property Tax (-)	0	0	1,100,000
Taxes on Used Subsurface (-)	457,616	82,990	74,000

Estimated changes

Table 11 summarizes the findings of simulations. As it shows, simulations in this analysis predict a 21.87% decrease in EPT revenue compared to 2007 baseline, and 18.78% decrease compared to 2008 baseline. Predicted decrease is bigger than official estimate (-15.66%), if calculated with 2007 baseline, and smaller than official estimate (-24.01%), if calculated with 2008 baseline.

Table 11. Summary of Simulation Results

	2007 baseline	2008 baseline
Defining EPT tax base		
EPT revenues	1,343,782	1,666,000
Including: Unified Tax	*55,980*	*72,000*
EPT revenues excluding Unified Tax	1,287,802	1,594,000
EPT tax rate	10%	10%
EPT tax base	**12,878,020**	**15,940,000**
Adjusting tax base to reflect PTC changes		
Plus (2007 actual):		
Road Tax (+)	636,000	721,000
Emergency Tax (+)	1,277,196	1,569,392
Minus (2008 estimate, adjusted for 2008 expected inflation, 11.7%):		
Sales tax (adjusted for inflation)	3,800,358	4,245,000
Property tax (adjusted for inflation)	984,781	1,100,000
Taxes on used subsurface (adjusted for inflation)	66,249	74,000
Adjusted tax base	**9,939,828**	**12,811,392**
Defining estimated EPT revenues and estimated change		
Estimated EPT revenues under PTC, exluding Unified Tax	993,983	1,281,139
Estimated EPT revenues under PTC, including Unified Tax	1,049,963	1,353,139
Estimated % Change (based on simulations)	**-21.87%**	**-18.78%**
Estimated % Change (official estimates*)	**-15.66%**	**-24.01%**

* official estimate for 2007 is defined as 2008 estimate adjusted for inflation

Annex 3. Value Added Tax (VAT)

Description of Baseline

The rate of VAT in the current Tax Code is 20%. VAT taxpayer registration threshold is 4 000 000 som, and 5 000 000 for baking industry. A number of sectors is exempt (listed in Table 12), and a zero-rate is applied to exports of goods and services, international shipping, and processing of goods under special customs regime.

Proposed Change

A summary of main provisions for change introduced by the draft PTC is provided in Table 12 and is outlined below.

- The biggest change is a reduction of VAT rate from 20% to 12%.
- A 4 000 000 threshold is applied universally, without exception for the baking industry.
- PTC removes exemptions for medical supplies and postal services.
- PTC introduces new exemptions for charitable and voluntary supplies and for supplies of mineral fertilizers.
- PTC replaces a zero rate for international shipping and processing of goods under special customs regime with a VAT exemption.
- PTC replaces a zero rate for exports of services with an exemption; while export of goods remains zero-rated.

Table 12. Summary of Proposal

Current Tax Code	Draft Proposed Tax Code (PTC)	Comment
Tax rate:	**Tax rate:**	
20%	12%	
Threshold:	**Threshold:**	
4 000 000 som (5 000 000 for baking industry)	4 000 000 som	
Exempt:	**Exempt:**	
- Supplies related to land, agricultural products and buildings; - Supplies of gold; - School supplies and training materials in official language; - Financial services; - Financial lease; - Insurance and Pensions; - Transportation services; - Services related to international shipping; - Roaming services; - Communal services;	(+) (exemptions remain)	

- Privatization; - Supplies by non-profit organizations; - Ritual services and goods;		
- Supply of medicines - Postal services	(-) Exemptions removed	
	New exemptions: - Charitable supplies - Voluntary supplies - Supplies of mineral fertilizers	
	New exemptions: - International shipping - Processing of goods under special customs regime	Currently zero-rated, exempt by the PTC
	New exemptions: - Export of services	Currently both goods and services are zero-rated. The PTC exempts services, and leaves goods zero-rated.
Zero rated:	**Zero rated:**	
- International shipping - Processing of goods under special customs regime		Currently zero-rated, exempt by the PTC
- Export of goods and services		Currently both goods and services are zero-rated. The PTC exempts services, and leaves goods zero-rated.

Motivation

Proposed changes were designed on the basis of the mid-term strategy for tax policy in Kyrgyz Republic for 2006-2008. The overall goal of this strategy was to reduce overall tax burden, stimulate international trade and investment, and better tax administration.

The strategy appreciated the importance of indirect taxation and praised earlier efforts to improve administration of VAT. It also listed a number of industries, goods and services where the government considers it necessary to regulate pricing through VAT reforms: medicines / medical supplies, agricultural supplies, and imported production equipment. The strategy does not set any other specific goals to VAT reform.

Methodology

Any VAT reform leads to a combination of interrelated fiscal, efficiency and distributional effects. The scale of analysis of these effects depends to a large extent on the data and time constraints, policy objectives, and the nature of expected reforms.

1. Assessment of fiscal effect in the absence of major VAT restructuring.

Since the biggest change in the PTC is a major reduction in VAT rate, and there is almost no other significant structural change proposed, the basic approach is to estimate overall revenue reduction by

applying the new rate to the 2007 baseline tax base. These straightforward calculations leading to a 40% reduction estimate are provided in Table 15, which also compares them to official estimates (of -32.3%, adjusted for inflation). As with EPT, the 2007 baseline is selected to make the VAT estimate comparable to PIT estimates, which were based on 2007 data to allow analysis in a regional breakdown.

2. Multi-sector simulations to assess implications from changed treatment of export in services (and other structural effects).

One significant change introduced by the PTC is exemption of exports in services, which is currently zero-rated. Tables 13-14 provide reference data on the export structure, which shows that the size of exports in services is significant and quickly increasing, both in absolute terms and as a share of total exports (it represented a half of all exports in 2007). This change should increase VAT revenues (or decrease the estimated reduction of revenues after PTC). Other, secondary, structural effects are also likely, as industries react to price changes after the VAT rate is reduced.

Table 13. Reference Data on Exports Structure, 2003-2007

	2003	2004	2005	2006	2007*
Total Exports, mln USD	590	733	687	811	1,143
Exports of Services, mln USD	158	210	256	375	577
Exports of Services as a share of Total Exports	**26.8%**	**28.6%**	**37.2%**	**46.2%**	**50.5%**

* (based on Q3 2007 data)
Source: The National Bank of the Kyrgyz Republic

Accurate assessment of these structural effects (including the new exemption for export in services) requires a multi-sector, general equilibrium model. Developing such model was not feasible within this analysis because of two limitations. First, it required a more extended set of input-output data than would be quickly available. Secondly, developing an appropriate computable GEM would be difficult within the time of this assignment.

If all these resources are obtainable, such analysis could be conducted as a follow up.

3. Analysis of distributional effects

One of the key policy dimensions of a VAT reform is the effect it has on the household income and its distribution through the resulting price changes. Moreover, policy makers might be specifically interested in reform outcomes for particular income groups, especially the poorest. A significant reduction of VAT rate proposed by the draft proposed Tax Code will certainly have a positive welfare effect on households, but its distribution and indirect implications are not immediately clear.

There are different levels of insight with which we can assess distributional effects of price changes after a VAT reform[5].

- A complete General Equilibrium Model is the highest level of coverage because it helps to capture both direct effects on household incomes from price changes, and secondary indirect effects which result from the changed consumption of goods and factors of production in response to price changes.

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[5] Coady, David, 2006, "The Distributional Impacts of Indirect Tax and Public Pricing Reforms: A Review of Methods and Empirical Evidence," in *Analyzing the Distributional Impact of Reforms*, ed. by A. Coudouel and S. Paternostro (Washington: World Bank).

- A Limited General Equilibrium approach is possible for assessing direct and indirect effects only for a subset of price reforms or subset of households and sectors.

- A Partial Equilibrium Model is an instrument for assessing only direct welfare effects of price changes.

While there are considerable technical challenges to quickly produce a multi-sector analysis, such as GEM or LGEM, a Partial Equilibrium Model is a feasible and effective approach if there is sufficient household expenditure detail. Unfortunately, it was not possible to access a complete pool of Household Expenditure Survey data during the time of this assignment. However, this report describes a detailed methodology for conducting this analysis and, if such data becomes available, it will be possible to complete the analysis within a short period.

3-A. Proposed methodology for a Partial Equilibrium Analysis of distributional effects from rate reduction.

- Data Requirements. A Partial Equilibrium Analysis could be conducted with HES data containing details of consumption of commodities for which price changes are expected. In the case of PTC, in which the reduction of rate is universal, this includes the whole range of goods and services consumed by households. It is also necessary to have Input-Output data to assess final price changes for intermediate goods consumed by households (such as energy).

- Approach. Based on HES data, it is possible to calculate budget shares for the key goods and services, and then simulate a price change after reform to identify estimated change in the household real income. This information could be analyzed across households and against various distributional variables for the whole population (including impact on the poorest).

- Extension. It is also possible to use HES data to combine Partial Equilibrium Analysis of price effects with effects of existing social support programs, which would strengthen policy conclusions about impact of reform on poverty levels and income distribution.

- Example. An example of how a similar methodology could be usefully applied based on HES data is provided in an attached IMF Working Paper which looks into *Distributional Implications of the VAT Reform in the Phillippines,* by David Newhouse and Daria Zakharova[6].

Estimated direct revenue effect

Input data

Table 14 describes, for reference, official statistics for VAT collections in 2007, as well as official revenue forecast for 2008 and official estimate for 2008 under the PTC. It also provides official data on GDP, gross export and export of services for 2007, which illustrate the scale of exports in services, whose treatment would be changed under PTC, but which are left outside the model.

Table 15 summarizes the basic calculations of VAT revenue change, which is estimated at -40% (compared to -32.3% official estimate, indexed for inflation). One possible explanation for the difference is inclusion of the new exemption of exports in services, as it should theoretically increase the amount of tax revenue in the short term (by significantly decreasing the amount of VAT refund through excluding refund claims for exported services), which is not accounted for in calculations in this paper.

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[6] *Distributional Implications of the VAT Reform in the Phillippines,* by David Newhouse and Daria Zakharova, IMF Working Paper WP/07/153, July 2007.

Table 14. Official Revenue, GDP and Exports Data (2007 actual, 2008 forecast)

	2007 (actual)	2008, Current TC (official forecast)	2008, New TC (official estimate)
VAT revenues, mln som	12,702	16,000	9,600
GDP, mln som	139,749		
GDP, mln USD	*3,752*		
Gross export, mln som	42,582		
Gross export, mln USD	*1,143*		
Export of services, mln som	21,511		
Export of services, mln USD	*577*		

Table 15. Summary of Change Estimates

	2007 baseline
VAT revenues 2007 (baseline)	**12,702**
Current VAT tax rate	20%
Current VAT tax base	63,508
PTC VAT tax rate	12%
Estimated PTC VAT revenues	7,621
Estimated % Change (based on simulations)	**-40.0%**
Estimated % Change (official estimates, 2007 baseline, adjusted for inflation)	**-32.3%**