



*Final Technical Report*

# **Rationally Allocating the Annual Revenue Targets of the Bureau of Internal Revenue**

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**Prepared for**

**The Bureau of Internal Revenue  
Department of Finance  
Republic of the Philippines**

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# Preface

This report is the result of technical assistance provided by the Economic Modernization through Efficient Reforms and Governance Enhancement (EMERGE) Activity, under contract with the CARANA Corporation, Nathan Associates Inc. and The Peoples Group (TRG) to the United States Agency for International Development, Manila, Philippines (USAID/Philippines) (Contract No. AFP-I-00-00-03-00020-00 Delivery Order 800). The EMERGE Activity is intended to contribute towards the Government of the Republic of the Philippines (GRP) Medium Term Philippine Development Plan (MTPDP) and USAID/Philippines' Strategic Objective 2, "Investment Climate Less Constrained by Corruption and Poor Governance." The purpose of the activity is to provide technical assistance to support economic policy reforms that will cause sustainable economic growth and enhance the competitiveness of the Philippine economy by augmenting the efforts of Philippine pro-reform partners and stakeholders.

Atty. Jose Mario C. Buñag, Commissioner of Internal Revenue, by letter dated December 17, 2006, requested EMERGE to provide technical assistance to help the Bureau of Internal Revenue (BIR) implement the Lateral Attrition Act by enhancing and/or developing a system to assess the revenue potential of the different implementing offices of the BIR and to rationally allocate the Bureau's annual revenue target to its district offices, officials and employees. This required immediate attention to address the rewards and attrition provisions of the Lateral Attrition Act and its implementing rules and regulations. The task was taken up by Dr. Romulo Miral, Jr., a tax administration specialist and the EMERGE team leader for Fiscal Sustainability, and Mr. Ulysis San Juan, statistician, who wrote this report about their efforts.

The views expressed and opinions contained in this publication are those of the authors and are not necessarily those of USAID, the GRP, EMERGE or the latter's parent organizations.

DESIGNING A SYSTEM FOR  
**RATIONALLY ALLOCATING THE ANNUAL REVENUE TARGETS  
OF THE BUREAU OF INTERNAL REVENUE**  
TO ITS DISTRICTS, OFFICIALS, AND EMPLOYEES  
AS BASIS FOR PERFORMANCE EVALUATION, AND GIVING OUT REWARDS, AND SANCTIONS,  
PURSUANT TO R.A. 9335 OR THE PERFORMANCE ATTRITION ACT OF 2005

**FINAL INTEGRATIVE REPORT**

**JUNE 2007**

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**ABSTRACT**

The EMERGE technical assistance on the Bureau of Internal Revenue (BIR) Performance Management System (PMS) was envisioned to contribute towards the implementation of the Performance Attrition Act (Republic Act No. 9335). However, the PMS technical assistance covers only office performance measurement, evaluation, and rewards. It does not cover revenue goal allocation assignments to which these PMS components should be hinged on. Moreover, the law adds to regional goal allocation, that of allocation to individuals (officials and employees). Thus, the current technical assistance was requested.

*First Component: Interim Revenue Goal Allocation (CY 2007).* An alternative statistical and formula-based goal allocation scheme and simulation results were derived and presented to BIR counterparts. The features of the alternative scheme are the (1) use of historical collection data versus data of the immediately preceding year to capture patterns indicative of relative revenue capacities, (2) use of estimates versus actual data on non-recurring transactions to skip the extremely time-consuming and tedious verification process, (3) clustering of revenue regions to arrive at stable patterns of collection performance, and (4) averaging regional contributions to growth in overall collection to determine regional goal allocation. Simulations under this scheme were compared to those under *status quo*. Results suggest that the alternative goal allocation scheme, which is less tedious and time consuming, may be used to draw the initial revenue goal allocations that could be immediately issued at the beginning of the year. Following the current practice, the initial revenue goal allocations could be subsequently modified mid-year based on actual collections and other relevant developments in the first semester.

The allocation method under the *status quo* was maintained for this year because of reluctance by BIR counterparts, who claimed that they needed more time to familiarize themselves with and introduce the proposed system to all stakeholders; moreover, several revisions on goal allocations were made to accommodate requests from the regions and districts.

*Second Component: Long-Term Revenue Goal Allocation (CY 2008 and beyond).* The basic recommendation for long-term regional goal allocation is to move towards an allocation scheme based on revenue capacity. For individual goal allocation in the intermediate term, the office collection target could be the shared target of all attributable individuals in the office. An individual will be recommended for attrition or not depending on his/her PMS or personnel evaluation system (PES) rating. Over the long-term, an individual's goal could be a combination of the unit collection goal, i.e., the shared goal, and individual key performance indicators. The weights of the performance indicators will vary depending on the position or actual duty of the individual.

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## LIST OF ACRONYMS

AAB	Authorized Agent Bank
BIR	Bureau of Internal Revenue
BOC	Bureau of Customs
CY	Calendar Year
DBCC	Development Budget Coordinating Committee
DBM	Department of Budget and Management
DOF	Department of Finance
DST	Documentary Stamp Tax
ETS	Excise Tax Service
GDP	Gross Domestic Product
GOCC	Government-Owned and –Controlled Corporation
GRDP	Gross Regional Domestic Product
IRR	Implementing Rules and Regulations
LGU	Local Government Unit
LTS	Large Taxpayers Service
NGA	National Government Agency
PES	Personnel Evaluation System
PMS	Performance Management System
RA	Republic Act
RDO	Regional District Office
RMO	Revenue Memorandum Order
RMSE	Root Mean Square Error
RR	Revenue Region
RRS	Representative Revenue System
TAD	Total Absolute Deviation
TRA	Tax Remittance Advice

## **I. BASIC PROJECT INFORMATION**

### **A. Background and Rationale**

Republic Act (RA) No. 9335 or the Performance Attrition Act of 2005 seeks to improve the revenue generation capability and collection performance of the Bureau of Internal Revenue (BIR) and the Bureau of Customs (BOC), respectively, through a rewards and attrition scheme.

The Development Budget and Coordinating Committee (DBCC) assigns annual collection goals to BIR and BOC. Each bureau then allocates its overall collection goal to its regions and districts. To these regional- and district-level revenue goals, the Performance Attrition Act adds individual-level goals. The implementation of the rewards and attrition scheme contemplated in the Act is thus hinged on a sound revenue goal allocation system at the district and individual levels.

The on-going Performance Management System (PMS) technical assistance of USAID-EMERGE to BIR was envisioned to contribute towards the implementation of the Performance Attrition Act. However, PMS covers only office performance measurement, evaluation, and rewards. It does not cover revenue goal allocation, which should form part of the parameters underlying the PMS. Thus, this technical assistance on designing a rational system for revenue goal allocation was provided.

### **B. Project Objectives**

The technical assistance project on revenue goal allocation aims to develop and prescribe a revenue goal allocation system for BIR.

Specifically, it aims to:

1. determine the factors that should underlie a revenue goal allocation system to regions, districts and individuals,
2. develop an allocation framework and indicators of collection effort and fairness in allocation,
3. assess the revenue potential of the collection units relative to their resources,
4. design a system for allocating the BIR overall collection target across levels (districts and individuals) and time periods (interim and long-term),
5. complete the goal assignments of individual RDOs and attributable individuals for CY 2007, and provide assistance in drafting the technical portions of revenue memorandum orders (RMOs) for the implementation of the prescribed revenue goal allocation system.

## II. ORGANIZATION OF THE INTEGRATIVE REPORT

This Integrative Report documents the findings, analysis, and recommendations of the consulting team tasked with the technical assistance project on revenue goal allocation.

Separate sections are devoted for each of the following main topics

- Conceptual and legal frameworks for revenue goal allocation
- Review of past goal allocation practices
- The revenue goal allocation for CY2007
- Proposed enhancements on the revenue goal allocation process

Computational summaries and other project outputs are annexed to the Integrative Report.

### II. CONCEPTUAL AND LEGAL FRAMEWORKS FOR REVENUE GOAL ALLOCATION

#### A. Conceptual Framework

##### 1. Revenue collection

Revenue collection is the product of revenue capacity and revenue effort:

$$(Eq. 1) \quad \text{Revenue Collection} = \text{Revenue Capacity} \times \text{Revenue Effort}$$

**Revenue capacity** represents the potential or maximum revenue that could be collected by a region or district.

- It is largely determined by exogenous factors or those that are beyond the control of a region or district, such as the existence of the objects or bases of taxation, the level of economic activities in the area, and income of taxpayers.
- It is also dependent on the tax policies, laws, rules and regulations, which define among others, the economic activities and economic agents to be taxed and the tax rates to be imposed.
- Finally, it is determined by the manpower capacity and logistics available to the revenue district office that is responsible for tax collection and administration.

**Revenue effort** pertains to the effectiveness and efficiency of a region or district in extracting or collecting taxes from its tax base.

Revenue effort is determined by endogenous factors or those that are largely within the control of tax administrators. Alternatively, it is a measure of a region's or district's willingness to use its tax capacity.

Thus, revenue effort can be expressed as a ratio of revenue collection to revenue capacity:

$$(Eq. 2) \quad \text{Revenue Effort} = (\text{Revenue Collection} / \text{Revenue Capacity}) \times 100\%$$

## 2. Revenue effort as basis for performance evaluation

Performance evaluation should be based on revenue effort. If an assigned revenue goal approximates revenue capacity, then revenue effort can be measured as the ratio of actual collection to goal, that is:

$$(Eq. 3) \quad \text{Revenue Effort} = (\text{Revenue Collection} / \text{Revenue Goal}) \times 100\%$$

## 3. Determination of revenue goal

**Revenue Goal** should be based on revenue capacity. Unfortunately, it is very difficult to accurately measure revenue capacity. The DBCC has often used gross domestic product (GDP) as a proxy variable for revenue capacity, and sets the annual collection target of the BIR and BOC on the basis of the projected GDP.

However, for the purpose of allocating the bureau's revenue target to its district offices, the actual revenue capacities of the regions and districts do not have to be known. Estimates of **relative revenue capacities**, or what each revenue or district can collect relative to the others, could be arrived at and used for distributing the bureau's overall revenue goal.

## 4. Attributes of a desired goal allocation system

The following are considered to be the attributes of a desired goal allocation system:

- Fair and equitable
- Simple and transparent
- Formula-based and less *ad hoc*

A goal allocation system is considered **fair and equitable** if it assigns collection targets to regions and districts in proportion to their relative revenue capacities.

Thus, regions and districts with relatively higher revenue capacities should be assigned proportionately higher collection targets.

A goal allocation system should be **simple and transparent**. It should be easy to understand, and the bases or factors considered in the allocation should be verifiable from readily available data.

As far as practicable, a goal allocation system should be **formula-based** rather than *ad hoc*. The allocation formula should include only factors and variables that have sound conceptual and/or legal bases. The set of factors and variables used should be stable and consistent, and do not change very often.

## **B. Legal Framework**

RA 9335 requires BIR to allocate its assigned revenue target to its

- Districts and
- Officials and employees.

The Implementing Rules and Regulations (IRR) of RA 9335 used the term “Districts” to refer to revenue regions (RRs) and the Large Taxpayer Service (LTS) of BIR\*. Section 6(a) of the IRR of RA 9335 provides that:

“Revenue target setting for specific Districts shall consider, among others, the following factors:

- (1) the number of business establishments within the District and their historical sales and taxes paid;
- (2) the number of firms within the District that are engaged in the production and/or distribution of excisable products and their historical sales and taxes paid;
- (3) the number of registered employers within the district, their total number of employees and the historical data on the withholding taxes paid.

These factors should be the major determinants in setting of the target along with the district’s historical record of revenue collection: Provided, however, that target setting shall likewise consider fluctuations in prior years’ collection due to non-recurring transactions. Non-recurring transactions shall refer to one-time transactions which are substantial in amount (i.e., the amount accounts for 10 percent or more of a District’s collection for a particular month), including the following: (i) capital gains taxes from the sales of real property or shares of stocks (on a per transaction basis), (ii) documentary stamp taxes, (iii) estate and donor’s taxes, and (iv) special projects (e.g., the BIR’s voluntary assessment program). Transfer of taxpayers from one District to another, when such taxpayers substantially account for such District’s collection for the previous year, shall be taken into consideration in the allocation of targets among Districts.” (*Reformatting and underscoring supplied.*)

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\* In the BIR organizational structure, the primary allocation units are the revenue regions. Revenue regions are further comprised of revenue district offices.

On individual goal allocation, Section 6(b) of the IRR provides that:

“Similarly, target setting for individual Officials and Employees shall consider, among others, the historical record of revenue targets and of revenue collection or that of the previous incumbent of the position in the case of new appointees or newly-assigned Officials and Employees. The system for allocating revenue targets at the level of Officials and Employees shall strive towards the ability to ascribe changes in taxpayer behavior to specific actions of Bureau Officials and Employees. Such system shall therefore evolve from, and be based on, a better understanding of taxpayer behavior that enables the Bureau to predict and assess such behavior to a reasonable extent. Predictability of taxpayer behavior is necessary if the allocation of revenue targets among Bureau Officials and Employees is to have reasonable basis.” (*Underscoring supplied.*)

#### **IV. REVIEW OF PAST GOAL ALLOCATION PRACTICES AND COLLECTION PERFORMANCE**

##### **A. BIR’s Past Goal Allocation Practices**

BIR has established practices on goal allocation. The annual revenue goal assigned by the DBCC to the BIR is allocated to RRs, and the regional goals are further allocated to their component RDOs. However, goal allocation to officials and individuals of the Bureau though is not yet being practiced.

##### **1. Basic features**

**History.** The practice of goal allocation started in 1993 through Revenue Circular No. 6-93 (Annex “A”). At the onset, the Department of Finance (DOF) determined the targets for major types of taxes, as well as the allocation of revenue goals to the regions. Currently, the Development Budget Coordinating Committee (DBCC) assigns the overall revenue goal of BIR. BIR’s Planning Service, through its Statistics Division and in coordination with the RDOs, is then responsible for the allocating this revenue goal to the RRs and RDOs.

**Levels of complexity; consultations.** Review of RMOs (Annex “A”) reveal that methodologies in goal allocation ranged from simple, e.g., CY 1994 and CY 1995, to highly iterative, i.e., CY 1997 and recent years. In part, the level of complexity could be gleaned from the number of attachments that accompany the main RMO.

In general, however, the exercise of goal allocation is a consultative and iterative process involving the head office, RRs, and RDOs.

Initially, the head office presents tentative goal allocations to regional directors and revenue district officers. This allows the inputs of these officials to be incorporated in the determination of their respective allocations. Consultations continuously take place until the allocations are finalized.

***Time of exercise.*** Goal allocation is initiated and the pertinent RMO released, in the December prior to the subject year or in the first quarter of the subject year. Since annual data are used for the allocation exercise, an early release of tentative goal assignments could be facilitated by estimating the December collection to complete a year's data. When the actual collection figures come in, the assigned goals could then be adjusted accordingly.

***Notice of final goal allocation.*** Revenue goal allocations are formally transmitted through RMOs. Allocations are specified in annual terms, by RR and RDO and by type of tax. Monthly allocations are also specified. However, many RMOs on goal allocation have been amended within the calendar year as DOF changed its revenue target or RRs and RDOs requested amendments.

## **2. Unit of allocation**

***Allocation from RRs to RDOs.*** RMOs prescribe goals to RRs and authorize regional directors to distribute such goals to their respective RDOs in the same manner that the regional allocation was derived, or using any appropriate method. Allocations to RDOs are then submitted to the Deputy Commissioner for Operations and/or Planning Service, through the Statistics Division, for final comment/approval. It is noted again that the allocation of collection goals to officials and individuals is not yet practiced in BIR.

***Effects of organizational structure and realignment of tax types.*** Changes in the BIR organizational structure and reassignment of certain tax types have affected the units and levels of revenue goal allocation, as shown on the next page.

*Table 1. Effects of changes in the BIR organizational structure on the units and levels of revenue goal allocation, 2000 – 2006.*

<b>YEAR</b>	<b>CHANGE/S</b>	<b>CONSEQUENCE/S</b>
2000 – 2001	Creation of the LTS and the Excise Tax Service (ETS)	LTS and ETS became virtual revenue regions.  RMOs on goal allocation referred to allocation units as “IMPLEMENTING GROUPS”, which included the RRs, LTS, and ETS.
2002	Makati and Cebu offices were established for LTS, and ETS was incorporated to LTS.	Implementing groups were assigned to “REGIONAL CLUSTERS” as follows: <i>Cluster A</i> – LTS, Regions 4, 5, 6, 7, 8, 9, and 13 <i>Cluster B</i> – Regions 1, 2, 11, 12, 16, and 19 <i>Cluster C</i> – Regions 3, 10, 14, 15, 17, and 19 (20 implementing groups in all)
2003 – 2006	Stepwise revenue goal allocation was implemented – initially by tax type, and then by implementing groups (which were maintained at 20).  Special taxes on treasury bills and travel, previously credited to RR 6/RDO 33 (Manila), and taxes from stock transactions, previously credited to RR7/RDO 43, were reported under the Office of the Commissioner.	Facilitated by simple accounting procedures.

*Source of basic data: BIR RMOs, various issues.*

### 3. Allocation procedure

**Allocation formula.** The current basic computational formula used by the BIR’s Statistics Division in allocating the overall revenue goal to RRs and RDOs is shown below (See Annex “C” also).

Table 2. Current computational formula for allocating the overall BIR revenue goal to revenue regions and revenue district offices

OPERATION	COMPONENT/S
START	<i>Collection for CY(t – 1) or the year prior to the subject year</i>
-	Amount of tax remittance advices (TRAs) of national government agencies (NGAs)
-	Withholding taxes from government-owned and –controlled corporations (GOCCs) and local government units (LGUs)
-	Amount of non-recurring transactions
+	Net of taxpayer transfers
-	Special taxes
EQUALS	<i>Refined actual collection for CY(t – 1) or the year prior to the subject year</i>
+	Amount of tax remittance advices, grown by x-percent
+	W/holding taxes from GOCC/LGUs, grown by x-percent
+	Special taxes
+	Adjustment (ε) on Potential Capacity and Residual
+	Other measures
END	<i>Total goal for CY(t) or the subject year</i>

Source: BIR RMOs, various issues

The basic input data for allocation procedures are the actual collection of the immediate past year, by RR and RDO, and by tax type. The actual total tax collection data are netted of

- collections from special taxes, e.g., taxes on treasury bills and travel tax,
- non-recurring transactions, and
- tax remittance advice

– which are deemed outside the direct control of RRs and RDOs – and adjusted for transfers of taxpayers.

A common growth rate that is determined in consultation with RRs and RDOs is then applied to the baseline or refined collection of the previous year to arrive at the revenue target for the taxes which are within BIR's control. BIR separately projects the growths of the special taxes. The projected growth rates are applied to the previous year's collection of the regions and districts to arrive at their respective revenue targets for the special taxes for the succeeding year.

The combined revenue targets from the procedure described above usually fall short of the DBCC-assigned overall revenue goal of BIR for a subject year. The resulting gap is referred to by BIR staff as epsilon (ε). To close ε, it is allocated among RRs and RDOs in this manner:

- a. The head office tries to identify additional tax sources for each of the RRs and RDOs. Examples include new business locators, companies with near-expiry tax holidays, and special activities, such as amnesty programs. Based on these additional tax sources, RRs and RDOs are then given additional allocations.
- b. That part of ε which could not be closed after identifying additional sources of taxes is then distributed proportionately (according to relative shares in the total collection) across RRs and RDOs.

#### 4. Components of the allocation formula

**TRA of NGAs; withholding taxes of GOCCs, and LGUs.** TRA refers to the document issued by the Department of Budget and Management (DBM), which records the taxes collected or withheld by NGAs for crediting to BIR. GOCCs and LGUs also withhold taxes which are credited to BIR. RRs and RDOs have no control over the amounts and credits assigned to TRAs and withholding taxes, for purposes of revenue goal allocation.

Table 3 presents a comparative treatment of these components for CY 2002 to 2006.

*Table 3. Comparative treatment of TRAs of NGAs and withholding taxes from GOCCs and LGUs for revenue goal allocation purposes, BIR, CY 2002 – 2006.*

YEAR	RMO No.	TRA OF NGAS	W/HOLDING TAXES FROM GOCCS AND LGUS
CY 2002	11-2002	CY 2001 value increased by 10%	Only LGU was used in determining allocations, CY 2001 value increased by 10%
CY 2003	20-2003	Not grown; CY 2002 value taken as is	GOCCs and LGUs not used in determining allocations
CY 2004	06-2004	Not grown, CY 2003 as is	GOCCs and LGUs not used in determining allocations
CY 2005	02-2005	Not grown, CY 2004 as is	Not grown; CY 2003 taken as is
CY 2006	06-2006	Not grown, CY 2005 as is	5% uniform growth rate applied
	26-2006	Not grown, CY 2005 as is	5% uniform growth rate applied

**Non-recurring transactions.** RA 9335 formally defines non-recurring transactions as one-time transactions which are substantial in amount, i.e., the amount accounts for ten percent (10%) or more of an RR's collections in a particular month.

Non-recurring transactions include

- a. capital gains tax from the sales of real property or shares of stocks,
- b. documentary stamp taxes,
- c. estate and donor's taxes, and
- d. proceeds from special projects, such as amnesty programs.

In the previous years, however, other threshold proportions for non-recurring transactions were used. The recorded amounts of non-recurring transactions and their corresponding percentage in the annual regional collections are shown in the next table.

*Table 4. Non-recurring transactions: value and percentage of annual regional collection, BIR revenue regions, CY 2002, 2003, and 2005\**

RR	VALUE (MILLION PHP, INCLUSIVE OF SPECIAL TAXES)			PERCENTAGE OF ANNUAL COLLECTION OF REGION		
	2002	2003	2005	2002	2003	2005
1		74.6	835.1		2.7	18.9
2	155.7		1,322.1	8.0		37.1
3		8.3	35.3		0.6	2.2
4	22.9	120.2	115.2	0.4	2.1	1.5
5		11.1	208.6		0.2	2.5
6	2,787.9	4,012.3	922.4	14.3	15.8	2.9
7	2,449.5	437.5	2,422.7	6.9	1.2	5.0
8	202.1	2,320.5	1,983.5	0.5	5.6	3.6
9	54.3	373.6	1,304.9	0.4	2.1	5.3
10	26.7	6.0	80.3	1.3	0.3	3.2
11	7.1	110.4	126.5	0.3	4.0	3.4
12			33.9			1.1
13	155.6	160.5	228.6	3.2	3.1	3.3
14		369.5	10.2		15.7	0.3
15		1.3	6.7		0.1	0.4
16		16.4	91.1		0.6	2.4
17		15.9	22.3		1.4	1.6
18			7.6			0.3
19		56.2	69.9		1.5	1.4
LTS		1,653.7	1,059.7		0.9	0.5
<b>Total</b>	<b>5,861.7</b>	<b>9,748.0</b>	<b>10,886.6</b>	<b>10.3</b>	<b>17.1</b>	<b>17.6</b>

*\*The 2004 revenue goal allocation formula did not use non-recurring transactions as a variable.*

*Source: RMOs, various issues.*

**Transfer of taxpayers.** Changes in a region's or district's roster of taxpayers are prompted in the following ways:

- a. transfer of business address
- b. closure and merger of businesses
- c. re-classification of a taxpayer to a large taxpayer.

In case (a), the taxpayer transfers to the jurisdiction of another RDO. In case (b), the taxpayer may be struck off the list of taxpayers, remain in the jurisdiction of its RDO, or be transferred to the jurisdiction of another RDO. In case (c), the taxpayer transfers to the jurisdiction of LTS.

Transfer of taxpayers alters expected regional and district tax bases and therefore, projected collections. Thus, taxes due or unrealized from the transfer, merger, and closure of establishments are factored in the refinement of actual collection data. Each year from 2002 to 2006, RMOs prescribed specific procedures for dealing with data on the transfer of taxpayers.

**Special Taxes.** As provided for in RA 9335, the special taxes which are not allocated to all RRs and RDOs include:

- Taxes on Treasury Bills,
- Travel Tax,
- Stock Transaction Tax,
- Excise Taxes, and
- Documentary Stamp Tax (DST) on Government Securities.

The incidence of these taxes may cover one or more RRs or RDOs. Moreover, with the exception of excise taxes, special taxes are not directly collected by BIR but by other agencies, such as banks.

**Growth Rates Utilized.** Different growth rates are applied to the baseline net collection data of the year prior to the subject year in coming up with the collection goals for the subject year. The different growth rates utilized in coming up with the goal allocation in the past five years are found in the next table.

Table 5. Growth rates applied on net collection data of CY (t-1) for the determination of revenue goal allocation for subject CY (t), BIR, CY 2002 – 2006.

YEAR	RMO	GROWTH RATE USED*	BASES
2002	11-2002	3-tier growth rates (8,9&10%) for cluster and a uniform growth factor of 1.4%	As prescribed in RMO.
2003	20-2003	11.21%, uniform for all regions	As prescribed in RMO.
2004	06-2004	19.6 %, uniform for all regions	$\frac{[\text{Total 2000 Goal Net of TRA and Special Taxes -1}] \times 100\%}{\text{Refined CY 2003 Collection}}$
2005	02-2005	18.37%, uniform for all regions	$\frac{[\text{Total 2005 Goal Net of TRA, GOCCs/LGUs and Special Taxes -1}] \times 100\%}{\text{Average of Collection and Goal, CY 2004}}$
2006	06-2006	Different for each region with values ranging from 5.8% to 11.09%	Based on average GRDP growth rate for CY 2003-04
	26-2006	Different for each region with values ranging from 4.75% to 4.75%	Based on average of the collection growth rate for CY 2005 and GRDP for CY 2005 (Net of Agriculture)

\*Alternatively referred to as “balancing growth rate.”

## B. Comparison of Collection Goals and Actual Collection Performance

**Deviation of collection from goal.** With the exception of 2003, the BIR failed to meet its annual collection target from 2002 to 2006. However, certain RRs met or even surpassed their revenue goals. The absolute amounts of deviations from assigned goals are found in Table 6. Positive values indicate that actual collections exceeded the assigned revenue goals, while negative values indicate that actual collections fell short of the revenue goals. To allow for comparison, deviations are expressed in percentage in Table 7.

Note that positive deviations from the revenue goals do not necessarily indicate better revenue effort or performance in the same way that negative deviations from the goals do not necessarily indicate lower revenue effort. A region or district may exceed its revenue goal simply because it has been assigned a low revenue goal; on the other hand, a shortfall may have been due to an unreasonably high revenue goal. Unless the total revenue goal is rationally determined, and equitably allocated among the regions and districts, the deviations of actual collections to revenue goals are not necessarily a good measure of revenue effort or performance.

Table 6. Deviation of collection from revenue goal, by RR, BIR (in million Php), CY 2002 – 2006.

REVENUE REGION	DEVIATION OF COLLECTION FROM GOAL (PHP MILLION)				
	2002	2003	2004	2005	2006
1 CALASIAO, PANGASINAN	-170.4	-72.4	101.8	890.8	669.5
2 CORDILLERA ADMINISTRATIVE REGION	-118.7	-219.6	11.9	1,301.5	-44.0
3 TUGUEGARAO,CAGAYAN	-73.5	-28.8	-139.6	-82.9	61.7
4 SN FERNANDO, PAMPANGA	-370.0	-121.0	-28.3	190.8	-80.6
5 VALENZUELA, M.M.	-346.5	16.2	-388.1	86.0	187.6
6 MANILA	1,952.6	7,036.5	-6,840.3	2,625.6	-13,258.0
7 QUEZON CITY	-2,547.9	598.7	-700.7	303.3	1,965.9
8. MAKATI	-2,466.5	-164.2	721.8	-74.2	5,578.4
9. SAN PABLO CITY	-484.9	681.0	349.6	711.1	-827.3
10 LEGASPI CITY	-58.6	-129.7	-95.5	61.4	54.9
11 ILOILO CITY	-69.5	-124.1	151.9	157.8	40.9
12 BACOLOD CITY	-360.3	146.8	66.6	11.6	18.0
13 CEBU CITY	-1,482.6	30.6	175.2	398.0	-37.7
14 TACLOBAN CITY	20.7	367.6	679.5	1.5	9.5
15 ZAMBOANGA CITY	-162.9	23.8	-21.6	-97.7	40.6
16 CAGAYAN DE ORO CITY	-202.1	-127.2	-98.3	66.8	40.9
17 BUTUAN CITY	-101.5	39.3	-13.5	23.8	58.4
18 COTABATO CITY	-150.6	-217.2	46.2	16.1	131.4
19 DAVAO CITY	-347.1	28.9	97.2	190.0	29.8
20 LARGE TAXPAYERS SERVICE	-46,847.0	-5,256.8	-794.4	-9,373.5	-18,978.3
<b>TOTAL</b>	<b>-54,387.4</b>	<b>2,508.5</b>	<b>-6,718.6</b>	<b>-2,592.3</b>	<b>-24,338.5</b>

Source of basic data: Government Financial Statistics, Statistics Division,  
Planning and Policy Staff

Table 7. Percentage deviation from revenue goal, by RR, BIR, CY 2002 – 2006.

REVENUE REGION	PERCENTAGE DEVIATION FROM GOAL				
	CY 2002	CY 2003	CY 2004	CY 2005	CY 2006
1 CALASIAO, PANGASINAN	-0.04	-0.02	0.02	0.16	0.10
2 CORDILLERA ADMINISTRATIVE REG.	-0.03	-0.05	0.00	0.24	-0.01
3 TUGUEGARAO, CAGAYAN	-0.02	-0.01	-0.03	-0.02	0.01
4 SAN FERNANDO, PAMPANGA	-0.08	-0.03	-0.01	0.03	-0.01
5 VALENZUELA, M.M.	-0.08	0.00	-0.08	0.02	0.03
6 MANILA	0.44	1.66	-1.44	0.48	-1.96
7 QUEZON CITY	-0.57	0.14	-0.15	0.06	0.29
8 MAKATI	-0.55	-0.04	0.15	-0.01	0.83
9 SAN PABLO CITY	-0.11	0.16	0.07	0.13	-0.12
10 LEGASPI CITY	-0.01	-0.03	-0.02	0.01	0.01
11 ILOILO CITY	-0.02	-0.03	0.03	0.03	0.01
12 BACOLOD CITY	-0.08	0.03	0.01	0.00	0.00
13 CEBU CITY	-0.33	0.01	0.04	0.07	-0.01
14 TACLOBAN CITY	0.00	0.09	0.14	0.00	0.00
15 ZAMBOANGA CITY	-0.04	0.01	0.00	-0.02	0.01
16 CAGAYAN DE ORO CITY	-0.05	-0.03	-0.02	0.01	0.01
17 BUTUAN CITY	-0.02	0.01	0.00	0.00	0.01
18 COTABATO CITY	-0.03	-0.05	0.01	0.00	0.02
19 DAVAO CITY	-0.08	0.01	0.02	0.03	0.00
20 LARGE TAXPAYERS	-10.47	-1.24	-0.17	-1.71	-2.81
<b>TOTAL</b>	<b>-12.15</b>	<b>0.59</b>	<b>-1.41</b>	<b>-0.47</b>	<b>-3.60</b>

Source of basic data: Government Financial Statistics, Statistics Division, Planning and Policy Staff

## V. THE REVENUE GOAL ALLOCATION FOR CY 2007

### A. Overall Revenue Goal

The BIR revenue goal allocation to RRs and RDOs for 2007 basically followed the procedure used in previous years.

The BIR total revenue goal for CY2007 is P765,859 million. The amount is divided to **BIR Operations** and **Non-BIR Operations**. BIR Operations is that part of the collection goal which the Bureau can direct control while Non-BIR Operations refer to that part of the collection goal which the Bureau cannot directly control or administer.

The revenue goal on the BIR Operations for CY 2007 is P730,470 million which is computed as follows:

Total CY2007 BIR Goal		P765,859 M
Less: CY 2007 Goal on Non-BIR Operations		
Final Income Tax on T-Bills	P30,391 M	
DST on T-Bills	4,488 M	
Travel Taxes	510 M	35,389 M
CY2007 Goal on BIR Operations		P730,470 M

### B. Allocation to Revenue Regions

The CY 2007 collection goal of the BIR was allocated to RRs and RDOs using the following procedures:

1. The actual tax collection on BIR Operations for CY 2006, disaggregated by RR and totaling to P615,423 million, was used as starting point.
2. The CY 2006 collection from the following items, disaggregated by RR and totaling to P251,912 million, was netted out of the figure in #1 to arrive at the refined baseline regular cash collection for CY2006, which amounted to P363,512 million.

a. Excise taxes	P 58,314 M
b. Income tax collections from MALAMPAYA Consortium	10,583 M
c. Non-recurring collection transactions, each of which accounts for at least 10% of the district's total collection for a particular month	14,688 M
d. Tax payments of closed establishments	289 M
e. Withholding taxes of local government units	7,592 M
f. Withholding taxes on wages	90,000 M
g. Early or advance payments in CY2006 that have an effect in 2007 collection	12,881 M

h. Taxes from independent power producers net of MALAMPAYA Consortium	33,895 M
i. Withholding taxes on national government agencies paid thru tax remittance advice	18,356 M
j. Tax subsidies thru Special Allotment Release Order	4,918 M
k. Other factors peculiar to selected regions/districts that may adversely affect their collection: Damages by typhoons	395 M
<b>Total</b>	<b>P251,912 M</b>

3. Growth rates based on the economic and revenue assumptions in the National Government Revenue Program for CY 2007 and information gathered from consultations with the regions and districts and other government offices, were then assigned to the abovementioned tax items to arrive at the corresponding revenue targets for CY 2007. The revenue targets from these special taxes, broken down by regions and districts totaled to P270,152 million.

The balancing growth or the growth rate of 26.63 percent applied to the CY 2006 baseline regular collection to meet the CY 2007 goal was calculated as follows:

CY2007 Goal on BIR Operations		P730,470 M
Less:		633,664 M
CY2007 Collection Goal from special taxes	P270,152 M	
CY2006 baseline regular collection	P363,512 M	
Gap		P 96,806 M
Gap as percentage of CY2006 baseline regular collection		26.63%

The CY 2006 baseline regular collections of RRs were increased by 126.63%; the resulting figures represent the regular collection goals for CY 2007.

The sum of the collection goals from special taxes and the regular collection goals constituted the preliminary collection goals of the regions. Further adjustments on the preliminary collection goals were made based on the BIR Management's Committee's collective assessment of the revenue capacities of the regions. The bases for this assessment are not available.

Table 8. Revenue goal allocation, by RR and component (in million Php), BIR, CY 2007

REGIONS		REGULAR TAXES	SPECIAL TAXES	PRELIMINARY GOAL	MANCOM'S ADJUSTMENT	FINAL GOAL
<b>I. BIR Operations</b>		<b>460,317,858</b>	<b>270,152,142</b>	<b>730,470,000</b>	-	<b>730,470,000</b>
<b>A. Large Taxpayer Service</b>		<b>291,510,343</b>	<b>177,329,681</b>	<b>468,840,023</b>	-	<b>468,840,023</b>
<b>B. Revenue Regions</b>		<b>168,807,515</b>	<b>92,822,461</b>	<b>261,629,977</b>	-	<b>261,629,977</b>
1	Calasiao, Pangasinan	2,782,330	1,872,298	4,654,629	(20,238)	4,634,391
2	Cordillera Adm. Region	1,676,377	1,445,468	3,121,845	(13,573)	3,108,272
3	Tuguegarao, Cagayan	995,268	1,141,852	2,137,121	(9,292)	2,127,829
4	San Fernando, Pampanga	7,361,609	4,196,262	11,557,870	(59,001)	11,498,869
5	Valenzuela	8,105,606	2,550,217	10,655,823	(314,126)	10,341,697
6	Manila	15,096,609	9,488,812	24,585,421	1,992,014	26,577,435
7	Quezon City	41,091,844	18,576,857	59,668,702	(792,838)	58,875,864
8	Makati	46,872,157	23,829,363	70,701,521	(307,398)	70,394,123
9	San Pablo City	19,642,854	11,637,503	31,280,357	(136,002)	31,144,355
10	Legazpi City	1,421,873	1,778,164	3,200,037	(13,913)	3,186,124
11	Iloilo City	3,042,530	1,742,167	4,784,697	(20,803)	4,763,894
12	Bacolod City	2,502,537	1,356,699	3,859,236	(16,779)	3,842,457
13	Cebu City	6,087,801	3,066,849	9,154,650	(39,803)	9,114,847
14	Tacloban City	1,387,987	2,213,114	3,601,101	(3,294)	3,597,807
15	Zamboanga City	1,142,163	1,201,766	2,343,929	(10,191)	2,333,738
16	Cagayan de Oro City	2,401,455	1,689,664	4,091,119	(46,672)	4,044,447
17	Butuan City	1,104,639	879,386	1,984,024	(8,626)	1,975,398
18	Cotabato City	1,443,473	1,527,248	2,970,721	(12,916)	2,957,805
19	Davao City	4,648,404	2,628,770	7,277,174	(166,549)	7,110,625
<b>II. Non-BIR Operations</b>				<b>35,389,000</b>		<b>35,389,000</b>
	T-Bills			30,391,000		30,391,000
	DST on Gov't. Securities			4,488,000		4,488,000
	Travel			510,000		510,000
<b>Grand Total</b>				<b>765,859,000</b>	-	<b>765,859,000</b>

Source: BIR RMO 7-2007, April 25, 2007

## **C. Observations on Past and Current Revenue Goal Allocation**

### **1. Present practices vis-à-vis RA 9335**

Past and present practices in the BIR goal allocation process already follow certain concepts and methodologies prescribed by the IRR of RA 9335, such as the consideration of the following factors:

- Fluctuations in prior years' collection due to non-recurring transactions and
- Transfer of taxpayers from one RR to another.

### **2. Over-reliance on past collection performance**

However, BIR goal allocation relies mainly on past collection performance. It does not yet take into account revenue capacity factors, such as those identified in the IRR of RA 9335, namely, number of establishments and their historical sales, number of registered employees, and total number of employees.

A major problem is the absence of reliable data on revenue capacity factors. The BIR Tax Filer Registration database is not updated and its utility is limited because of the presence of numerous stop-filers. Moreover, RRs and RDOs do not coincide with the political and administrative regions and districts along which other government offices are organized. This complicates the use of official statistics from other government agencies because parallel disaggregations are not readily available.

The over-reliance on the immediately preceding year's collections also makes goal allocation prone to "gaming strategies." RRs and RDOs may not exert genuine and sufficient efforts to attain or exceed their collection goals since increased collection for the current year translates to higher goal allocation on the following year. A higher revenue goal assignment, in turn, increases the risk of attrition.

### **3. BIR Management Committee's assessment**

A new factor was introduced in the CY 2007 goal allocation formula. This was the adjustments in the regional goals based on the BIR Management Committee's independent assessment of the emerging economic developments and revenue potentials of the different regions. However, unlike the other factors used in the goal allocation that are based on verifiable data, the Management Committee's assessment of potential was not accompanied by supporting data. In the future, relying the Committee's assessment and its bases will be necessary to sustain objectivity and transparency in the allocation process.

#### **4. A setback of consultation**

The goal allocation process is very tedious and time consuming. It gives too much attention to consultation with the regional and district offices, and the data coming from them. The itemization of non-recurring transactions, transfers of taxpayers, and other items, the late submission of the required supporting documents, and the time required for their validation and reconciliation severely delay the goal allocation process. It is noted that DBCC issues the overall revenue goal of BIR for the following year on the third quarter of the current year. Ideally, the revenue goal allocations to RRs and RDOs are issued at the start of the following year.

The Statistics Division had prepared an initial draft of the RMO for the CY 2007 goal allocation as early as January 2007; however it had to go through a series of consultations and take into consideration the submissions of the different regions and districts. The RMO on the revenue goal allocation for CY 2007 was finally issued only on April 25, 2007. The numerous consultations and iterations notwithstanding, complaints on the individual allocations are still common. This is to be expected because everyone's objective is to have a lower goal allocation. However, a reduction in somebody's collection goal will result in an increase in someone else's collection goal since the iteration or adjustment process in revenue goal allocation is a zero-sum game.

### **VI. PROPOSED ENHANCEMENTS ON THE REVENUE GOAL ALLOCATION PROCESS**

The proposed enhancements to the BIR goal allocation process are categorized into: (1) unit of allocation (i.e. region/district and individual) and (2) time frame (i.e. intermediate and long-term). The latter category is largely determined by the availability of data and the level of readiness of the BIR people to adopt new concepts.

#### **A. Region/district goal allocation**

##### **1. Intermediate**

***An alternative goal allocation scheme*** and simulation results were presented by the EMERGE consultants to the Statistics Division and Policy and Planning Staff (January 23, 2007), Regional Directors and District Officers (24 February 2007), and the Management Committee of BIR (February 19, 2007).

The features of the alternative scheme are as follows (See Annex “D.1” also):

- a. ***Historical data versus data of immediately preceding year.*** Historical collection, instead of only the immediately preceding year’s collection, was used as basis for estimating the relative revenue capacity. The annual regional/district collection growth rates, shares in collection, and contribution to growth in the bureau’s collection for the period CY 2002 - 2006 were analyzed to establish trends and patterns that could indicate their relative revenue capacities.

A longer time series data would have been desirable. However, the collection data prior to 2002 refer to an entirely different BIR organizational structure. For example, in 2002, large taxpayers from the various regions were pooled under the Large Taxpayers Service to comprise a revenue region. Makati and Quezon City were also treated as separate and distinct revenue regions. Data for pre-2002 and 2002-onwards would therefore not be comparable.

- b. ***Estimates versus actual data on non-recurring transactions.*** Instead of the tedious and time-consuming process of requiring itemized reports of non-recurring transactions from RRs and RDOs and subsequently validating them, regional/district collection data were regressed against time to estimate the amounts of non-recurring transactions. The estimated amounts of non-recurring transactions were used to come up with baseline regular tax collections of RRs and RDOs.
- c. ***Clustering of revenue regions.*** The revenue regions were clustered or grouped together to arrive at more stable patterns of collection performance. Stable collection performance data constitute a good basis for revenue goal allocation and will impart confidence on those involved in the exercise. The bureau’s goal was first allocated by cluster consisting of regions that exhibit some homogeneity. Each cluster’s goal allocation was then distributed into its component regions, and each region’s goal allocation was subsequently distributed into its component district offices.
- d. ***Average of regional contribution to growth in overall collection.*** The average of the previous years’ regional contribution to growth in total BIR collection, which is computed as the product of a region’s collection growth rate and its share in total collection, was used as the basis for determining the regional goal allocation. The targeted collection growth rate of the bureau, i.e., growth of the collection goal over the previous year’s actual collection, was distributed proportionately to the regions based on their average contribution to growth in total BIR collection.

***Evaluation of the alternative goal allocation scheme.*** The following allocation methods were compared in terms of the difference between their computed regional goals and the actual regional collections for CY 2006:

- Method prescribed in RMO 6-2006
- Method prescribed in RMO 26-2006
- Alternative revenue goal allocation scheme described above

The total absolute deviation (TAD) and root mean square error (RMSE) between the computed regional goals and actual regional collection were used as bases for comparing the different allocation methodologies. Low TAD or RMSE indicate closer fit between the goal allocation and actual collection. Thus, a goal allocation methodology which yields lower TAD or RMSE would be more acceptable. Annexes “D.1” and “D.2” show the different allocation methods used and the simulation results.

Table 9 shows the actual collections in CY 2006 and the regional goals that were computed on the basis of existing goal allocation procedures provided for in RMO 6-2006, as amended by RMO 26-2006, and the alternative goal allocation described above. RMO 26-2006 yielded the lowest TAD and RMSE between the goals and actual collections of the regions. This is to be expected since RMO 26-2006 adjusted regional goals based on the actual collections for the first seven months of 2006.

The interesting comparison is between RMO 6-2006 and the alternative goal allocation scheme, which shows no significant difference in the goodness of fit measures between the goals and actual collections.

The result suggests that the alternative goal allocation scheme, which is less tedious and time consuming, may be used to draw the initial revenue goal allocations that could be immediately issued at the beginning of the year. Following the current practice, the initial revenue goal allocations could be subsequently modified in mid-year based on actual collections and other relevant developments in the first semester.

Table 9. Comparison of Actual and Collection Estimates Using Various Revenue Goal Allocation Methods, by RR, BIR, CY 2006.

REVENUE REGION	ACTUAL COLLECTION CY 2006	GOAL ALLOCATION BASED ON:			ABSOLUTE DEVIATION (COLLECTION MINUS GOAL)		
		RMO 6-2006	RMO 26-2006	ALTERNATIVE ALLOCATION SCHEME CY2002-05	RMO 6-2006	RMO 26-2006	ALTERNATIVE ALLOCATION SCHEME CY2002-05
1	6,095.0	4,330.9	5,402.8	5,057.8	1,764.0	692.2	1,037.2
2	2,559.8	2,669.5	2,559.6	3,544.8	109.7	0.2	985.0
3	1,780.5	1,838.5	1,738.7	2,245.7	58.0	41.8	465.2
4	9,177.8	9,306.0	9,268.1	9,769.4	128.2	90.3	591.6
5	9,610.9	11,539.0	9,411.4	10,426.8	1,928.1	199.5	815.9
6	35,006.1	32,068.6	37,401.2	36,350.3	2,937.6	2,395.0	1,344.2
7	64,373.3	64,678.7	62,690.5	62,924.5	305.4	1,682.8	1,448.8
8	81,778.7	74,280.1	76,177.3	70,712.2	7,498.6	5,601.4	11,066.6
9	28,032.2	30,523.5	29,184.7	30,348.5	2,491.3	1,152.5	2,316.3
10	2,903.4	2,849.4	2,822.9	3,366.0	54.0	80.6	462.5
11	4,405.8	4,815.0	4,377.0	4,780.1	409.3	28.8	374.3
12	3,318.7	4,006.4	3,331.7	3,884.3	687.8	13.0	565.6
13	8,743.5	9,011.3	8,757.0	8,862.0	267.8	13.5	118.5
14	3,224.9	3,453.4	3,277.5	3,927.2	228.6	52.7	702.3
15	1,914.4	2,055.9	1,871.3	2,272.1	141.4	43.1	357.7
16	4,173.4	4,522.2	4,145.2	5,004.1	348.8	28.2	830.7
17	1,586.8	1,620.0	1,550.5	1,824.5	33.2	36.3	237.8
18	2,620.0	2,669.5	2,486.0	3,008.2	49.5	134.0	388.2
19	6,109.3	6,342.6	6,127.0	6,444.2	233.3	17.8	334.9
LTS	282,387.7	296,786.5	296,786.5	294,614.3	14,398.8	14,398.8	12,226.7
<b>Total</b>	<b>559,802.2</b>	<b>569,367.0</b>	<b>569,367.0</b>	<b>569,367.0</b>	<b>34,073.3</b>	<b>26,702.3</b>	<b>36,669.9</b>
					<i>Root Mean Square Error</i>		
					846.0	789.2	846.8

## 2. Long-term

***Veering towards an allocation scheme based on revenue capacity.*** The past and current methodologies of goal allocation including the proposed intermediate enhancements outlined above rely mainly on the historical collection performance of RRs and RDOs. Based on these methodologies, there is a strong tendency for RRs and RDOs, which have registered increasing growth rates in their collection performance, to be assigned increasing shares in the bureau's overall revenue goal. This may not be fair and is a big disincentive against RRs and RDOs to exert their best effort.

As pointed out in the conceptual framework of this study, collection is a product of revenue capacity and revenue effort. To be fair and to avoid the disincentive against increasing revenue effort, the goal allocation should be based solely on the revenue capacities of RRs and RDOs. Recognizing this, RA 9335 identified certain revenue capacity factors that should be considered in the goal allocation. Unfortunately, there are no reliable and meaningfully organized data that could be used in coming up with a measure of the revenue capacities of the RRs and RDOs.

As a preliminary step towards a revenue goal allocation process that is based on revenue capacity, BIR should build its database of revenue capacity factors or indicators. Once the BIR has come up with the database, it can either use a representative revenue system or regression models to estimate the revenue capacity of regions/districts:

### ***Measures of revenue capacity.***

- a. The Representative Revenue System (RRS) of the United States Advisory Council for Intergovernmental Relations presents a practical framework that can guide BIR in moving towards a goal allocation procedure that is based on revenue capacity. Following the RRS, the BIR can adopt the following steps in measuring the revenue capacities of the regions/districts:
  - Identify the relevant tax base of each taxes collected by the BIR.
  - Calculate the average tax rate for each of the tax bases by dividing total BIR collections by the total tax base for that tax.
  - Apply each average tax rate to the appropriate tax base in each region/district. This determines the tax capacity of each region/district for each of its tax bases.

- Add together the tax capacity from each tax base to obtain the total tax capacity for each region/district.

The most critical step in the procedure outlined above is the identification of the appropriate tax or revenue base and the establishment of the database. This is an area where follow-on technical assistance can be provided to the BIR. Annex “F” lists the major taxes and their corresponding tax bases.

b. Regression models can also be used to estimate revenue capacity. This is done by regressing the historical collection data of the regions/districts on various factors that are viewed *a priori* to be related to revenue capacities, such as the following:

- Number of establishments
- Gross receipts business establishments
- Number of persons employed
- Average family income of the residents
- Market values of properties

The predicted revenue collections of the regression equation could then be used as the measure of revenue capacities.

## **B. Individual goal allocation**

### **1. Identification of individuals subject to attrition**

The assignment of collection goals to officials and individuals of the BIR is a new dimension in revenue goal allocation mandated in RA 9335. The IRR of the law requires that individuals, particularly those performing functions resulting to collection, be assigned collection goals.

In pursuit of this mandate, an RMO on the attrition of BIR personnel has been drafted. The RMO identifies the officials and individuals in the bureau who will be assigned collection goals. Among them are: Regional and Assistant Regional Directors, Revenue and Assistant Revenue District Officers, and all revenue officers performing functions resulting to collection (collection and assessment group).

## 2. Determination of individual revenue goal assignment

The individual goal assignment is based on the following formula:

- **Unit target** = Target of Head and Asst Head of Unit
- **Unit target** = Voluntary Collection Target + Assessment Collection Target
- **Voluntary Collection Target** = sum of the targets of revenue officers with collection function
- **Assessment Collection Target** = sum of the targets of revenue officers with assessment and audit functions

The assignment of collection target to individuals is currently practiced only by individuals with assessment functions. The practice is to assign three percent of the RDO collection target to the Assessment Section, which in turn is distributed to the revenue officers or examiners. Nonetheless, there are several issues raised concerning the assignment of collection target and cases, such as the manner by which they were arrived at (Annex “H”).

The distribution to individuals of the voluntary collection target, which accounts for 97 percent of a collection goal, poses a major problem. The draft RMO prescribes that it be distributed to revenue officers of the Collection Section. This prescription has been vigorously objected to. It was pointed out that revenue collection officers, except those without authorized agent banks (AABs), have very limited control over or any direct influence on revenue collection.

## 3. Proposed enhancements to the individual goal allocation process

### a. Intermediate

The BIR is organized according to major tax administration functions, i.e., assessment, audit, collection, and taxpayer assistance. The tax collected by the Bureau is the result of the concerted efforts of all its units. Thus, it is difficult to assign separate collection targets to the various units of the bureau, more so to its individual employees.

Assigning individual collection targets is not practical or feasible at this point in time primarily because BIR does not have the information or historical data to come up with a sound allocation of collection target to individuals.

It is recommended that:

- The office collection target will be the shared target of all attributable individuals in the office. If a revenue district office fails to meet its collection, then all individuals in that office should be candidates for attrition.

- An individual will be recommended for attrition or not, depending on his/her performance management system (PMS) or personnel evaluation system (PES) rating.

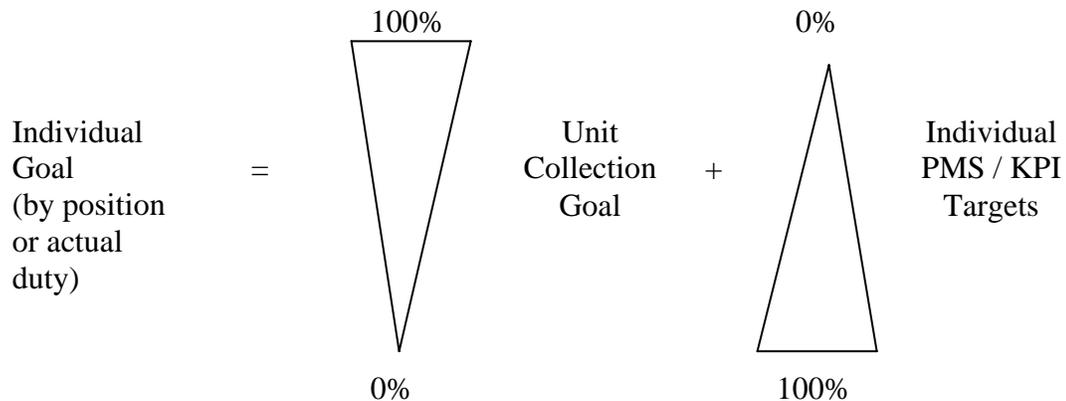
**b. Long-term**

It is recommended that a more balanced set of performance indicators -- not just the collection goals -- be considered in the evaluation for the rewards and attrition of BIR personnel. (See Annex “G” for an indicative listing of performance standards and performance measures.) Collection is the outcome of the concerted efforts of all units and individuals. As pointed out in a study of the EMERGE consultants on performance management system, the metrics of BIR at the unit and individual level reveals that close to 90 percent of the performance measures are not collection-based or are non-financial in nature.

RA 9335 and/or its IRR may have to be amended to include other performance indicators, besides collection, in the attrition of officials and individuals of the bureau:

- An individual’s goal could be a combination of the unit collection goal, i.e., shared goal and individual key performance indicators.
- The weights of the performance indicators will vary depending on the position or actual duty of the individual. Those individuals who have greater authority or control over the unit’s collection target will be assigned higher weights for the unit collection goal.

This prescription is illustrated below:



## **Annex “A”**

### **COMPENDIUM OF PAST AND EXISTING METHODOLOGIES ON REVENUE GOAL ALLOCATION, BIR**

**ANNEX "A": COMPENDIUM OF PAST AND EXISTING METHODOLOGIES ON REVENUE GOAL ALLOCATION, BIR**

Calendar Year	Source / Date	Data Used	Allocation Methodology				Pages of Source Document/ Accompanying Attachments on Details/ Results
			Assumptions	Level	Procedure /Analytical Tool	Sub-level	
1993	RMO 6-93/ 02-Feb-93	<p>Collection for CY 1992</p> <p>For with RDOs with incomplete collection report as of Jan-93, estimates based on previous' years collection (1992)</p> <p>Collection of 83 RDOs with complete 12.09 reports as of 26-Jan-1993; for those with incomplete report, estimates were made based on the previous years' collection. For VAT, 1992 quarterly payments for 3 groups of taxpayers, adjusted to conform with monthly payment scheme under R.A. No. 7643</p>	<p>Annualized data captured the effect of the adjusted personal exemptions under R.A. 7643 and economic dislocation caused by the power crisis and pull-out of US military bases</p> <p>Monthly goals for T-bills were later added to RD 25 Income tax goals</p> <p>Allocation covers only the existing measures; separate RMC will be issued for the proposed measures</p>	Revenue Region and/or RDOs	Ratios based on share per RR/RDO across major tax type by applying uniform growth rate over the previous years' collection	Ratios based on share per RDO	<p>RMC: 1 sheet printed on both sides (2 pp.)</p> <p>Annex A or copy (as indicated in the RMC is missing; no copy provided (per Stat Div, no copy of such Annex is available, as well as, in the Library)</p>
1994	RMO 5-94 / 19-Jan-94	<p>Jan-Sep 1993 Collection plus estimates for 4<sup>th</sup> Quarter with formula as follows: Let <math>X_1</math> = Jan-Sep 1992 Collections <math>Y_1</math> = CY 1992 Collections <math>X_2</math> = Jan-Sep, 1993 Collection <math>Y_2</math> = estimated CY 1993 Collections <math>Y_{04}</math> = estimated 4<sup>th</sup> Quarter Collections for CY 1993 <math>X_1 / Y_1 = X_2 / Y_2</math> Therefore, Collection for CY 1993 is <math>Y_2 = (X_2 + Y_1) / X_1</math> With Jan-Sep Collection available; <math>Y_{04} = Y_2 - X_2</math></p> <p>For VAT, converted monthly collections for CY 1992</p>	<p>Followed the redefined areas of jurisdiction and renumbering of regions and districts contained in RAO</p> <p>T-bills are included in regional level under RR6 – Manila where BSP is located</p> <p>Target maybe increased /decreased pending final assessment of CY 1993 performance</p> <p>Allocation of goals by type of tax is prepared by the DOF's Planning Office</p>	Revenue Region/ RDOs by type of tax	<p>Ratios and proportions using 1993 collection except for Excise and VAT</p> <p>Monthly totals are distributed by region using ration and proportion, except for Excise and VAT, such that the district collections is divided by the overall total collections multiplied by the new monthly estimate.</p> <p>For VAT, "workback method" using ratio and proportion to allocate by region and district</p>	Regional Directors are required to distribute their goals using the procedures described in Annex A or any approach deemed appropriate	<p>RMC (2 p.)</p> <p>Annex A: Methodology+Source of Income Table (4 pp.)</p> <p>Consolidated Report on 1994 Work Plans Submitted to ___ Program –Blank Form (2 pp.)</p> <p>Table 2: Existing Measures and New Measures (1 p.)</p> <p>Table 2-A: CY 1994 Revenue Regions Income Tax Monthly Goal Allocation (1 p.)</p> <p>Table 2-B1: CY 1994 Excise Tax Goal Allocation by Product by Region (1 p.)</p> <p>Table 2-B2: CY 1994 Excise Tax Goal Allocation By Region on Existing and New Measures (1 p.)</p> <p>Table 2-C1: CY 1994 VAT Collection Goal By Region on Existing and New Measures (1 p.)</p> <p>Table 2-C2: CY 1994 VAT Collection Goal By Region on (1 p.)</p> <p>Table 2-C3: CY 1994 VAT Collection Goal By Region on New Measures and Existing Measures (3/6%) (1 p.)</p>

**ABBREVIATIONS USED**

BIR	= Bureau of Internal Revenue	Stat Div	= Statistics Division (of BIR)	RGDP	= Regional Gross Domestic Product	CY	= Calendar Year
DOF	= Department of Finance	RR	= Revenue Region	NGRP	= National Government Revenue Program	NGA	= National Government Agencies
RAD	= Revenue Accounting Department (of BIR)	RDO	= Revenue District Office	R. A.	= Republic Act	LGU	= Local Government Units
LTS	= Large Taxpayers' Service (of BIR formerly a Division)	VAT	= Value-added Tax	E. O.	= Executive Order	GOCCs	= Government-Owned and Controlled Corporations
ETS	= Excise Tax Service (of BIR's LTS)	TRA	= Tax Remittance Advice	RMO	= Revenue Memorandum Order		

ANNEX "A": COMPENDIUM OF PAST AND EXISTING METHODOLOGIES ON REVENUE GOAL ALLOCATION, BIR, *continued*

Calendar Year	Source / Date	Data Used	Allocation Methodology				Pages of Source Document/ Accompanying Attachments on Details/ Results
			In Goal Allocation	Assumptions	Level	Procedure / Analytical Tool	
1994 ... cont.			Excise Tax goal allocation was based on the actual place of payment by product by month, except for the fermented liquor which was based on place of production/removal (RMO 5-93).				Table 2-D: CY 1994 Revenue Regions Other Percentage Tax Monthly Goal Allocation (1 p.) Table 2-E1: CY 1994 Other Taxes Monthly Goal Allocation By Region on Existing and New Measures (1 p.) Table 2-E2: CY 1994 Other Taxes Monthly Goal Allocation By Region on Existing Measures (1 p.) Table 2-E3: CY 1994 Other Taxes Monthly Goal Allocation By region on New Measures (1 p.)
1995	RMO-41-95 /13-Mar-1995	1995 Collection for Jan-Oct  CY 1993-94 Collection	Stock Transaction was allocated as Other Percentage Tax to RR7, RDO 43 = Pasig  Excise Tax per head office's district  Capital Gains Tax allocated to RDO Makati City  T-Bills solely for RR6-Manila	Revenue Region	Used Regional Factor (RF) as follows: 1. To get RF for each region - $RF_1 = (1993 \text{ Collection} + 1994 \text{ Collection} + 1993 \text{ Goal} + 1994 \text{ Goal})/1$ : $RF_{19} = (1993 \text{ Collection} + 1994 \text{ Collection} + 1993 \text{ Goal} + 1994 \text{ Goal})/1$ 2. To get the share of each region- a. Get the sum of the 19 RFs $TRF = RF_1 + RF_2 + \dots + RF_{19}$ b. Get the percent share of each region to total: $P_n = RF_n / TRF$ , where TRF is the sum of all RFs n=1 to 19 $P_1 + P_2 + \dots + P_{19} = 1.0$ c. To get the Regional Goal, e.g., Income goal of Region 1 $R_1 = \text{Total Income Tax Goal} \times P$ where $P_1 = \text{share of Region 1}$	Regional Directors are required to distribute their goals to their respective RDOs following the procedure described in Annex A or any method they consider appropriate	RMO (4 pp.) Table 1: BIR Over-all Collection Target, CY 1995 (1 p.) Table 2. CY 1995 Goal Allocation BY 5 Major Sources Existing and New Measures (1 p.) Table 3. CY 1995 Monthly Allocation By Region Table 4. CY 1995 Income Tax Monthly Goal Allocations (1 p.) Table 5. CY 1995 Excise Tax Monthly Goal Allocation (1 p.) Table 6. CY 1995 Value-added Tax Monthly Goal Allocation (1 p.) Table 7. CY 1995 Other Percentage Tax Monthly Goal Allocation (1 p.) Table 8. CY 1995 Other Taxes Monthly Goal Allocation (1 p.)
					Monthly allocation per tax type is based on percent		distribution multiplied to regional goal (Table 2)
1996	RMO 41-95/15-Dec-1995	1995 Collection  Monthly Regional goal allocation for each Type of Tax based on the actual collections reported by Treasury	T-Bills Goal was allocated solely to RR6-Manila  Goal on Stock Transaction including 2% on IPO per RA 7717 was allocated solely to RR7/RDO 43 Pasig City  Excise Tax was allocated based on the place where the corporate head office pay their taxes per LT Division	Revenue Region	Percent distribution of the actual regional collection from Jan to Oct 1995	Regional Director are required to distribute goals to their respective RDOs to submit such to the Office of Dep. Commissioner	RMO (2 pp.) Table 1. BIR Overall Collection Target , CY 1996 (1 .p) Table 2. CY 1996 Goal Allocation By Major Source Existing and New Measures (1 p.) Table 3. CY 1996 Tax Monthly Goal Allocation By Region (1 p.) Table 4. CY 1996 Income Tax Goal Allocation By Region (1 p.) Table 5. CY 1996 Excise Tax Goal Allocation By Region (1 p.) Table. CY 1996 Value-Added Tax Monthly Goal Allocation BY Region (1 p.)

ANNEX "A": COMPENDIUM OF PAST AND EXISTING METHODOLOGIES ON REVENUE GOAL ALLOCATION, BIR, *continued*

Calendar Year	Source / Date	Data Used	Allocation Methodology				Pages of Source Document/ Accompanying Attachments on Details/ Results
			In Goal Allocation	Assumptions	Level	Procedure / Analytical Tool	
1996 ... cont.			<p>Goal on Capital Gains from Privatization was allocated to RDO 49-North Makati since the office of APT is in Makati</p> <p>Goal on Travel Tax was allocated to RR6-Manila where PTA is located</p>				<p>Table 7. CY 1996 Other Percentage Tax Monthly Goal Allocation By Region (1 p.)</p> <p>Table 8. CY 1996 Other Tax Monthly Goal Allocation By Region (1 p.)</p>
1997	RMO 2-97 / 21-Jan-97	<p>Excise Tax Incremental Revenue</p> <p>CY 1995 Cumulative Reports of Collection By Type</p> <p>Percent Share of Revenue Regions By Products Covered by Excise Tax of Tax</p> <p>CY 1995 Final Collection Report</p> <p>Tax Payments of Large Taxpayers, Jan-Feb 1995</p> <p>Adjusted Regional Collection for CY 1995</p> <p>CY 1996 monthly collections for January-July</p>	<p>Ratio of January-July 1995 is equal to the ratio of January-July 1996 to CY 1996</p> <p>CY 1997 collection on petroleum products were all credited to RR8 since its goal was allocated to the same</p> <p>Goal on Petroleum Products was allocated solely to RR 8-Makati where head offices of the oil companies are located</p> <p>Goal on all other petroleum products was allocated to the regions of production</p> <p>Goal on T-bills was allocated to RR6 where BSP is located</p> <p>Goal on Stock Transaction Tax inclusive of 2% on IPO per RA 7717 was allocated solely to RR7 – Quezon City</p> <p>Goal on Travel Tax was allocated to Manila where PTA is located</p> <p>Goal on Documentary Stamp Tax was allocated for all regions based on adjusted CY 1995 collection</p>	Revenue Region	<p>Estimated CY 1996 collections was used basis for the monthly goal allocation, i.e., :</p> <p>Aug 1996 Collection = <math>\frac{\text{Aug 1995}}{\text{CY 1995 Collection}}</math> x CY 1995 Collection</p> <p>1997 Excise = 1995 Percent Share on Alcohol of Excise Tax of for Region 1 Region 1 x CY 1997 Excise Goal on Alcohol Products</p> <p>Excise Tax = Excise Tax Goal in Goal for (Alcohol Products + Region 1 Tobacco Products + Mineral Products + Misc. Articles + Tobacco Inspection Fees)</p> <p>For all other taxes, share distribution of the adjusted 1995 Regional collection</p> <p>1997 VAT Goal = 1995 Percent for Region 1 Share of Region 1 x CY 1997 VAT Goal</p> <p>Percent Distribution for each type of tax for monthly allocation</p> <p>Jan 1997 VAT = <math>\frac{\text{Jan 97 VAT Goal}}{\text{CY 97 VAT Goal}}</math> x CY 97 VAT</p>		<p>RMO (5 pp.)</p> <p>Table 1: BIR Collection Goal, CY 1997 (2 pp.)</p> <p>Table A: Comparative Overall Goals, CY 1996-CY 1997 (3 pp.)</p> <p>Table B: BIR Comparative Collection Goals for Five Major Type of Taxes CY 1996-1997 (1 p.)</p> <p>Table 2: Regional Goal Allocation by Major Source, CY 1997 (1 p.)</p> <p>Table 3: Total Monthly Tax Goal Allocation by Region, CY 1997 (1 p.)</p> <p>Table 4: Monthly Income Tax Goal Allocation By Region, CY 1997 (1 p.)</p> <p>Table 5: Monthly Excise Tax Goal Allocation Y Region, CY 1997 (1 p.)</p> <p>Table 6: Monthly Value-Added Tax Goal Allocation By Region, CY 2997 (1 p.)</p> <p>Table 7: Monthly Other Percentage Tax Goal Collection By Region. CY 1997 (1 p.)</p> <p>Table 8: Monthly Other Taxes Goal Allocation by Region, CY 1997 (1 p.)</p> <p>Table 9: Monthly Collection By Type of Tax, CY 1997</p> <p>Table 10: Comparative Regional Collection Goals for CY 1996-1997 (1 p.)</p> <p>Table 11: Desired Level of Collection Performance, CY 1997 (1 p.)</p> <p>Annex A: Percent Share of Revenue Regions By Products Covered By Excise Tax (1 p.)</p> <p>Annex B: Regional Goal Allocation BY Products Covered BY Excise Tax, CY 1997 (1 p.)</p> <p>Annex C: Adjusted Regional Collection by Type of Annex D: Monthly Collections BY Type of Tax, CY 1996 (1 p.)</p> <p>Annex E: Regional Goal Allocation Methodology (4 pp.)</p>

ANNEX "A": COMPENDIUM OF PAST AND EXISTING METHODOLOGIES ON REVENUE GOAL ALLOCATION, BIR, *continued*

Calendar Year	Source / Date	Data Used		Allocation Methodology			Pages of Source Document/ Accompanying Attachments on Details/ Results
		In Goal Allocation	Assumptions	Level	Procedure / Analytical Tool	Sub-level	
1998	RMO 1-98/ 19-Jan-98	Jan-Nov 97 Actual Monthly Collection By Major Type of Tax  Jan-Nov 1997 Regional Collections By Major Type of Tax	Assumed that ratio of the Jan to Nov 1996 to CY 1996 is equal to the ratio of Jan-Nov 1997 to CY 1997  (On Excise) For Petroleum Products, solely allocated to RR 8-Makati City where the company's headquarter is located; for all other products, the regional allocation is based on where production is made  Goal for Tax on interest from Treasury Bills is given to RR6-Manila since BSP is under its jurisdiction Goal on Stock transaction tax under the Other Percentage inclusive of the 2% on IPO per RA 7717 is allocated to RR7-QC since the PSE is located in RDO 43-Pasig City Goal on Travel Tax is given to RR6-Manila since PTA is located in Manila	Revenue Region	<p>A. Estimated CY 1997 Collection Est. CY 1997 Collection = <math>\frac{[\text{Jan - Nov 1997 Collection}]}{[\text{Jan - Nov 1996 Collection}]} \times \text{CY 1995 Collection}</math></p> <p>B. Determine the CY 1998 Goal for each region</p> <ol style="list-style-type: none"> <li>1. Compute the % growth rate of the CY 1998 goal over the CY 1997 Estimated Collection</li> <li>2. Collection of each region was made to grow by the same percentage to get the total goal for each region:</li> </ol> <p>e.g.:</p> <ol style="list-style-type: none"> <li>(1) Get the percentage growth: <math>\frac{\text{CY 1998 Goal - CY 1997 Est. Coll.}}{\text{CY 1997 Estimated Collection}}</math></li> <li>(2) Get the total goal for RR1 <math>\text{CY 1997 Est. Collection} \times (1)</math></li> </ol> <p>(Annex A shows the breakdown for the CY 1998 goal by region)</p> <p>C. Determine the CY 1998 regional goal for each major type of tax</p> <ol style="list-style-type: none"> <li>1. Determine the % distribution of the CY 1997 Estimated Regional Collection of each major tax type (Annex B) e.g.:</li> </ol>		<p>RMO (5. pp)</p> <p>Table 1- BIR Overall Collection Goal, CY 1998 (2 pp.)</p> <p>Table 1-A – Comparative Overall Collection Goals, CY 1997-CY 1998 (3 pp.)</p> <p>Table 1-B BIR Comparative Collection Goals By Five Major Type of Taxes, CY 1997-CY 1998 (1 p.)</p> <p>Table 2 – Regional Goal Allocation By Major Source, CY 1998 (1 p.)</p> <p>Table 3 – Total Monthly Tax Goal Allocation By Region, CY 1998 (1 p.)</p> <p>Table 4-Monthly Income Tax Goal Allocation by Region, CY 1998 (1 p.)</p> <p>Table 5 – Monthly Excise Tax Goal Allocations by Region, CY 1998 (1 p.)</p> <p>Table 6 – Monthly Value-Added Tax Goal Allocation by Region, CY 1998 (1 p.)</p> <p>Table 7 – Monthly Other Percentage Tax Goal Allocation by Region, CY 1998 (1 p.)</p> <p>Table 8 – Monthly Other Taxes Goal Allocation by Region, CY 1998 (1 p.)</p> <p>Table A – Total Goal by Region, CY 1998 (1 p.)</p> <p>Table B – Percent Distribution of Collection by Region, BY Major Type of Tax, Cy 1997 (1 p.)</p> <p>Annex C – Percent Distribution of Total Monthly Collection by Major Type of Tax, CY 1997 (1 p.)</p> <p>Annex D – Total Monthly Goals by Major of Tax, CY 1998 (1 p.)</p>
					<p>1998 VAT Goal of Region 1 = Percent Share on 1997 VAT Collection of Region 1 x CY 1998 VAT Goal</p> <p>D. Determine the monthly regional goal allocation for each type of tax</p> <ol style="list-style-type: none"> <li>1. Compute the total goal for each by major type of tax <ol style="list-style-type: none"> <li>a. Estimate the collection for the month of Dec 1997 by ratio and proportion using the CY 1996 Collection</li> <li>b. Determine the % distribution of the 1997 monthly collection for each major type of tax</li> <li>c. Apply the %-distribution of a particular major type of tax to its corresponding goal e.g.: Jan 1998 VAT Goal = % share on Jan 1997 Vat Coll. (Annex C) x CY 1998 VAT Goal (Table 1-B)</li> </ol> </li> <li>2. Determine the monthly goal for each region by major type of tax using Table 2 and Annex D. e.g.: Jan 1997 VAT Goal of Region 1 = <math>\frac{\text{Jan 1997 VAT Goal}}{\text{CY 1997 VAT Goal}}</math> (Annex D) x CY 1998 VAT Goal (Table 2)</li> </ol>		

ANNEX "A": COMPENDIUM OF PAST AND EXISTING METHODOLOGIES ON REVENUE GOAL ALLOCATION, BIR, *continued*

Calendar Year	Source / Date	Data Used	Allocation Methodology				Pages of Source Document/ Accompanying Attachments on Details/ Results
			In Goal Allocation	Assumptions	Level	Procedure / Analytical Tool	
1999	RMO 95-98 / 16-Dec-1998  (Revised RMO was issued due to reduction in the total goal of the agency; the RMO contents/ attachments were the same see RMO 25-99 of 18-Mar-2003)	Collection Data (except for the tax on T-Bills from Bureau of Treasury) were gathered from BIR's Form 12.09 (per RAD)	<p>Regional Goal allocation for Excise Taxes is based on the place of production.</p> <p>Goal on Interest Tax from Treasury bills is given only to RR-6</p> <p>Goal on Stock Transaction Tax is allocated to RR 7 Travel Tax is given to RR6</p> <p>Goal on Tax Amnesty is integrated to Income Tax Goal</p> <p>Revenue Regions 6 and 7 do not conform with this procedure since the goals for taxes mentioned follow different procedures</p>	Revenue Region	<p>To determine the estimated CY 1998 collection for each major type of tax:</p> <p>Jan-Oct '98 collection + Nov-Dec 97 (conservative estimate) - 1997 VAP Collection CY 1998 Estimated Collection</p> <p>To compute for the total CY 1999 goal of each region: 1) Compute the national growth rate excluding goals from T-bills, Stock Transaction Tax, and Travel Tax</p> <p>National = Total Goal Growth - CY 1998 Est'd. Coll. Rate CY 1998 Est'd. Coll.</p> <p>2) Using Annex B, multiply the CY 1999 estimated collection of each region by 20.44% (National growth rate)</p> <p>3) Add the goals for the special taxes to the respective RRs collecting from such sources To compute for the regional goals for each major type of taxes: 1) Using Annex B, allocate the regional goal for each major type, applying the ratio and proportion. 3) Add the goals for the special taxes to the respective RRs collecting from such sources 4) Add up the goals for the five major types for each region, and make income taxes absorb any adjustment to maintain the result in Annex A. To compute for the monthly allocation of the regional goals 1) Compute the total goal for each major type of tax – (a) Determine the monthly goal for each major type of tax by applying ration and proportion to the CY 1998 actual monthly collection, and (b) Adjust collection goals such that the total goal for the first semester is 60% of the CY 1999 goal. 2) Determine the monthly goal for each region by major type of tax using Tables 2 and 3.</p>		<p>RMO (3 pp.) Table 1 – Revised RIR Overall Collection Goal, CY 1999 (2 pp.) Table 2 – Revised Regional Goal Allocation BY Major Source, CY 1999 Table 3 – Revised Total Monthly Tax Goal Allocation By Region, CY 1999  Table 4 – Revised Monthly Income Tax Goal Allocation By Region, CY 1999 Table 5 – Revised Monthly Excise Tax Goal Allocation by Region, CY 1999 Table 6 – Revised Monthly Value-Added Tax Goal Allocation By Region, Cy 1999  Table 7 – Revised Monthly Other Percentage Tax Goal Allocation by Region, CY 1999 Table 8 Revised Monthly Other Taxes Goal Allocation By Region, CY 1998 Annex A – Methodology Used in Goal Allocation Annex B - CY 1998 Collection By Region Annex C-Revised Total Goal By Region, Cy 1999</p>

ANNEX "A": COMPENDIUM OF PAST AND EXISTING METHODOLOGIES ON REVENUE GOAL ALLOCATION, BIR, *continued*

Calendar Year	Source / Date	Data Used	Allocation Methodology			Pages of Source Document/ Accompanying Attachments on Details/ Results
			In Goal Allocation	Assumptions	Level	
2000	RMO 2 - 200/ 28- Dec 1999	January-Oct 1999  Collection Data o Income Taxes (except tax on t-Bills and Travel tax), VAT, Other Percentage Tax and Other Taxes were gathered from BIR Form 12-09	Goals for LTS and ETS were derived for each major type of tax, the balance was then allocated to the regions	LTS, ETS and Regions	A. LTS 1) Determine the percent share of collection from the 630 identified large taxpayers to total BIR collections for January-October 1999, by major type of tax type	RMO (7 pp.) Table 1: BIR Overall Collection, CY 2000 Table 2: BIR Overall Goal BY Implementing Group, CY 2000 Table 3: BIR Goal Allocation By Major Source, CY 2000
		Collection Data on T-Bills and Travel Tax from the Bureau of Treasury  Collection data on Excise Taxes were gathered from the Large Taxpayer Service	Excise tax collections are excluded in the computation of the basis of the regional tax		2) Apply The large taxpayer % share collections to CY 2000 goal for each major tax type. 3) Add est. goals per tax type to arrive at the total LTS goal.	Table 4: Total Monthly Collection Goal by Major Source, CY 2000 Table 5A-5C: Monthly Collection Goal BY Implementing Group, CY 2000 Table 6: Regional Monthly Tax Goal Allocation, CY 2000
		Collection data on Large Taxpayers (630) were gathered from the Large Taxpayers Division			B. ETS 1) Determine the percent share of collection from the 100 identified taxpayers to total BIR collection for January-October 1999, by major tax type except for excise	Table 7: Regional Monthly Income Tax Goal Allocation, CY 2000 Table - 8 Regional Monthly Value-Added Tax Goal Allocation, CY 2000 Table 9 - Regional Monthly Other Percentage Tax Goal Allocation, CY 2000
					2) apply the excise taxpayer percentage share of collections to CY 2000 goal for each major tax type except excise tax	Table 10 - Regional Monthly Other Taxes Goal Allocation, CY 2000 Annexes A1-A5 – Summaries of Collection from BIR Form 12.09, LTS, ETS
			Regional Goal Allocation by Major Tax Type		3) Assign the entire Excise tax goal of P63,306 M to the Excise Taxpayer Service	
					4) Add goals per tax type including the excise tax goal to arrive at he total 2000 ETS Goal	
			Monthly allocation of goals ( For Revenue 6 and 7, this procedure is also followed without the special taxes in section 4 ©(2)		C. Regions 1. Refinement of Revenue Collections by Major Source. a) Collection of taxpayers which have transferred t other regions b) Collections from identified large taxpayers in the region to be transferred to the LTS © Collections from identified excise taxpayers in the region to be transferred to the ETS d) Deduct actual collections on special taxes for Jan-Oct 1999 from total BIR Collection net of collection from identified LT and excise taxpayers by type of tax to arrive at the adjusted totals by type of tax.	
			District Goal Allocation		a) Determine the share of collection refined regional to total adjusted BIR for each region by major tax type (b) Allocate regional goal for each major tax type by applying share to total adjusted BIR collection © Add the goals for special taxes to the four (4) major tax types for the region a) Compute the total goal for each month by major type of tax – Determine the total monthly goal for each major type of tax by applying ration and proportion technique to the CY 1999 estimated monthly collection (b) Determine the monthly goal for each implementing group by major type of tax A. Refine the collections by major tax type as follows: (1) Collections of taxpayers which have transferred to another district. (2) Collections from identified large taxpayers in the district to be transferred to the LTS (3) Collections from identified excise taxpayers in the district to be transferred to the ETS (4) Deduct special tax collection (5) Determine share of each refined district collections to total adjusted for the region by major type (B) Allocate district goals as follows: (1) Allocate district goal for each major tax type by applying share to total adjusted regional collection (2) Allocate monthly the RDO goals by tax type of tax (3) Add the goals for special taxes to the district concerned (4) Add the estimated goals for the four (4) major tax types for each district to arrive at the total district goal	

ANNEX "A": COMPENDIUM OF PAST AND EXISTING METHODOLOGIES ON REVENUE GOAL ALLOCATION, BIR, *continued*

Calendar Year	Source / Date	Data Used	Allocation Methodology				Pages of Source Document/ Accompanying Attachments on Details/ Results
			Assumptions	Level	Procedure / Analytical Tool	Sub-level	
2001	09-2001/ 29-Mar-01	Collection Growth Rate, CY 1991-CY 2000	Treatment of Goal on Special Taxes	Implementing Group:	1) Allocation of the Total Goal for CY 2001 For RRs and LTS	Procedure and Methodology	RMO (5 pp.) Table 1: Collection Goal By Type of Tax, CY 2001 (1 p.) Table 2: Total BIR Collection Goal, CY 2001 (1 p.)
		Gross Regional Domestic Product (GRDP) growth rate, CY 1991 CY-2000 (PSY 1999 for CY 1994-1999)	a) The goal on Excise tax is solely allocated to LTS in consonance with E.O. #306.	LTS and Revenue Region	$Goal_{2001} = Collection_{2000} + (Collection_{2000} \times Est. \text{ GRDP growth rate} \times Buoyancy \text{ rate}) + \epsilon$	of the district goal allocation shall be at	Table 3: Monthly Collection Goal by Major Source, CY 2001 (1 p.) Table 4: BIR Collection Goal by Major Source for LTS, CY 2001 (1 p.)
		Total CY 2000 Revenue Regional collections (Collection Service)	b) Goal on T-Bills is allocated to RR6		where: $GRDP = \text{Gross Regional Domestic Product}$	the discretion of the	Table 5: Total Monthly Goal Allocation BY Implementing Group/Regions, CY 2001 (1 p.)
		Total CY 2000 Collection from Large Taxpayers and Excise Taxpayers furnished by the LTS	c) Goal on Stock Transaction under Other Percentage tax is allocated to RR7		$Estimated = \frac{GRDP_{2001} - GRDP_{2000}}{GRDP_{2000}} \times Buoyancy \text{ Rate} = \frac{Coll. \text{ Growth rate}}{GRDP \text{ growth rate}}$	Regional offices concerned following	Annex A: Monthly Internal Revenue Collection, CY 2000 (1 p.) Annex B: Refined Collection by Type of Tax Per Revenue Region, CY 2000 (1 p.)
					i.e., adjustment to maintain the total goal set by the DOF	Tables 3B and 5	Annex C: Total Monthly Collection by Implementing Group, CY 2000 (p.1)
		B) Total Monthly Collection Goal By Major Source,	d) Goal on Travel Tax is allocated to RR6 where the PTA is located		2) The computation of the total monthly collection goal by implementing group was as follows i) Using the monthly internal revenue collections, allocate the total monthly goal by applying the ration and proportion technique ii) The LTS and RRs ill allocate their monthly goal for the four major types of taxes ff. Table 5; Stat Div will consolidate their goal allocations to come up with Tables 3A and 3B iii) The result of Tables 3A and 3B will be added to come up with the monthly collection goal by major source (table 3 will represent the CY 2001 monthly collection goal by major source		
		Collection by GFS Classification, Jan-Nov 2000			3. To compute for the CY 2001 goal by major source, the methodology is as follows:  a. Refine the Collections by Major Source (Annex B), The CY 2000 collections have been refined by deducting the following: i) Excise Taxes collection from LTS ii) T-Bills collection from Revenue Region No. 6-Manila iii) Stock Transaction Tax Collection from Revenue Region no. 7 Quezon City iv) Travel tax collection from Revenue Region No. 6 v) LTDO collection from RR8		
		Estimated collection by GFS Classification, Dec 2000	Implementing groups are required to submit to PPS /Stat Div any significant behavior in the collection and other related data which could served as basis fore the review of the set targets		b. Compute the Goal g=for implementing group by major source (Table 4) i. Using the refined collection figures (Annex B), allocate the goal for RRs for each major type, applying the ratio and proportion technique to CY 2000 collection ii) Add the goal for the special taxes to the respective RRs for each major type, using the ratio and proportion iii) Add up the goals by major sources for RRs. Any adjustment shall be absorbed by Income taxes g VAT to maintain the result of Table 2.		
		C) BIR Collection By Major Source 1. Revenue Region Collections for CY 2000 on Income Taxes, VAT , Other Percentage Taxes and Other Taxes from BIR Form 1209 as of 01- Mar-2001					
		2.Other Collection data on T-Bills and Travel Tax (Office of the Regional Director RR6 and Form 1209)					
		3. Collection from Stock Transaction (Collection Div. of RR7)					
		4. Collection Data on 200 Large Taxpayers District Office (LTDO)					

ANNEX "A": COMPENDIUM OF PAST AND EXISTING METHODOLOGIES ON REVENUE GOAL ALLOCATION, BIR, *continued*

Calendar Year	Source / Date	Data Used in Goal Allocation	Assumptions	Allocation Methodology Level	Procedure / Analytical Tool	Sub-level	Pages of Source Document/ Accompanying Attachments on Details/ Results
2002	11-2002 / 8-May-02	Collection for Jan-Dec 2001 Collections (Revenue Accounting Division)	1. The following 2001 Adjustments were taken into account the following: a) Closures of business establishments b) Transfers of taxpayers were tracked to the new region; c) Non-recurring collections which does not include collection of estate tax, donors tax, capital gains tax, etc. other than a one-time collection that accounts for at least twenty percent (20%) of the district collection for the month; d) VAT collections affected by RA 9136 (The EPIRA Act of 2001); e) Collections from the Voluntary Assessment Program (VAP); and f) Collections from NGAs and LGUs per reports of the Collection Service	Implementing Group via Clustering (3 groups)	1. Allocation of the Total CY 2002 Goal for RRs and LTS- - To compute for the total CY 2002 goal for Existing Measures of the Various RRs and LTS the ff: formulas was used; $Goal_{2002} = Collection_{2001} + (Collection_{2001} \times Cluster Growth rate \times growth factor) + Special Types + \epsilon$ where: Special Types are: i) Excise Taxes for LTS, T-Bills for RR 6 mad Stock Transactions for Revenue Region No. 7 and ii) Collections from NGAs and LGUs were increased by ten percent (10%) since by at least said percentage; $\epsilon$ = balancing amount to maintain the total goal on existing measures set by the DOF 2. The administrative measures were assigned to the specific implementing groups using ratio and proportion by major tax type (applicable) 3. Monthly Goal of Group and Source	Comments on the goal allocation of concerned RDO that should be addressed to the Deputy Commissioner for Operations Group	RMO (6 pp.) Table 1: Collection Goal by Type of Tax, CY 2002 ( 1 p.) Table 2 – Total BIR Collection Goal, CY 2002 Table 3- Monthly Collection Goal by Major Source, CY 2002 (1 p.) Table 3A-Monthly Collection Goal by Major Source for LTS, CY 2002 (1 p.) Table 3B: Monthly Collection Goal By Major Source for Revenue Regions, CY 2002 (1 p.) Table 4-BIR Collection Goal By Major Source By Implementing Group, CY 2002 (1 p.) Table 4A: BIR Collection Goal for Existing Measures by Major Source by Implementing Group, CY 2002 (1 p.) Table 4B: BIR Collection Goal for Administrative Measures by Major Sources by Implementing Group, CY 2002 (1 p.) Table 5: Total Monthly Goal Allocation By Implementing Groups/Regions, CY 2002 91 p.) Table 7: Total Monthly Goal Allocation by Implementing Group/Regions for Value Added Taxes, CY 200 (1 p.) Table 8: Total Monthly Goal Allocation by Implementing Group/Regions for Percentage Taxes, CY 2002 (1 p.) Table 9: Total Monthly Goal Allocation By Implementing Group/Regions for Other Taxes, CY 2002 (1 p.)
		Clustered regional growth rate					
		Growth factor					
			Treatment of Goal on Special Taxes: a) The goal on Excise Tax is solely allocated to the LTS in consonance with E. O. No. 30 b) The goal on tax on collections from T-Bills is allocated to RR6-Manila, since it has jurisdiction where BSP is located. c) The goal on Stock Transaction Tax under the Percentage Tax type in the amount to RR7 where PSE is located		a) To compute for the CY 2002 collections have been refined by deducting the following: i. T-Bills collection from Revenue Region No. 6-Manila ii. Non-recurring taxes from each Revenue Region iii. Voluntary Assessment Program (VAP) collections b) Compute the monthly goal by Implementing Group, By Major Source (Table 4) i. Using the refined collection figures, allocate the goal for RRs for each major type, applying the ratio and proportion technique to CY 2001 collection; ii. Add the goal for the special taxes to the respective RRs collecting these sources iii. Allocate the monthly goal, by type of tax, using ratio and proportion to CY 2001 Refined collections. The recommended procedure and methodology for the District Level Allocation as follows: 1. Refine the CY 2001 collection data of the revenue districts as to closures, transfers, NGAs and LGUs and non-recurring collection (as qualified in data used) 2. Using the refined collection figure of each revenue district office apply the following formula: $Goal_{2002} = Collection_{2001} + (Collection_{2001} \times Cluster growth rate \times growth factor + Special Type(s) + \epsilon$ where Special Type(s) are: i. Collections from NGAs and LGUs which were increased by 10%; ii. Taxes specific to a particular RDO, such as Treasury Bills and stock transactions $\epsilon$ = balancing amount to maintain the total existing goal of each RR. 3. Identify the goal on Administrative Measures which can be assigned to specific RDOs and allocate the remaining through ratio and proportion technique to each RDO. 4. Compute the monthly goal allocation, by major type of tax		

ANNEX "A": COMPENDIUM OF PAST AND EXISTING METHODOLOGIES ON REVENUE GOAL ALLOCATION, BIR, *continued*

Calendar Year	Source / Date	Data Used		Allocation Methodology			Pages of Source Document/
		In Goal Allocation	Assumptions	Level	Procedure / Analytical Tool	Sub-level	Accompanying Attachments on Details/ Results
2003	RMO 20-2003/ 20 May-2003	1. Refined CY 2002 actual collections by implementing office taking into account the ff:	a) Goal on Excise Tax of P58, 406M is solely allocated to the LTS.	Revenue Regions	A. Total Goal By Major Tax Types (see Table 1) based on the figures given in the 2003 NGRP		RMO (4 pp.) Table 1: Total Collection Goal By Major Tax Type, CY 2003 (1 p.) Table 2: Monthly Collection Goal By Major Tax Type,
		a) CY 2002 collections of implementing offices based on 1209 Report of 27-Feb-2003; b) Collections from transferred –in/out taxpayers c) Collections from non-recurring transactions based on the ff: (i) Deficiency taxes paid by one taxpayer which accounts for more than 20% of the RDO's collection for a particular month; and (ii) Taxes on one-time transactions in 2002, i.e., Capital Gains Tax (on	b) Goal on tax from T-Bills of P28,172 M and Travel Tax of P413 per NGRP are allocated to RR 6 as BSP and DOT are located.  c) Goal on Stock Transactions tax of P1,118M under the Percentage Taxes is allocated to RR7-QC as PSE is located.		For other tax types, CY 2003 goal was located using the distribution of consolidated CY 2003 revised estimates, by major tax type (net of excise tax) submitted by the RRs last Feb 2003; thus for Tax Type N, the goal is computed as: $G_N = (E_N/T_0) \times (P424,007 - G_E)$ where: $E_N$ = Estimated Collection in 2003 from Tax Type N based on the consolidated Region's estimates		CY 2003 (1 p.) Table 3: Total Collection Goal By Implementing Office, CY 2003 (1 p.) Table 4: BIR Collection Goal By Implementing Offices By Major Tax Type, CY 2003 (1 p.) Table 5: Monthly Collection Goal By Major Sources, CY 2003 (1 p.) Table 6: Monthly Collection Goal By Major Sources CY 2003 (1 p.) Table 7: Monthly Collection Goal BY Major Sources, CY 2003 (1 p.) Table 8: Monthly Collection Goal BY Major Sources, CY 2003 (1 p.)
		Real Property and Shares of Stocks), Estate/Donor's Taxes, Expanded Withholding Taxes and DST on real taxpayer accounting for more than 20% of the RDO's collection for a particular month; and	d) Tax Remittance Advice – CY 2003 collection through TRAs was assumed to be equal to CY 2002 collection across all implementing offices		$E_0$ = Total Estimated Collection in 2003 net of excise taxes based on consolidated Region's estimates $G_E$ = Excise Tax Goal for 2003 = NGRP projection		Table 9: Monthly Collection Goal BY Major Sources, Cy 2003 (1 p.)
		d) Closures of establishments and property transactions paid by one taxpayer;			B. Monthly Collection Goal by Major Tax Type (See Table 2)		
		2. CY 2002 Collections from Tax Remittance Advice (TRA) of implementing offices dated 27-Feb-2003 as reported by the Revenue Accounting Division;  3. Consolidated CY 2003 Revised Estimates of Implementing Offices submitted February 2003;  4. NGRP dated March 10, 2003; and  5. CY 2002 BIR Collections by GFS Classifications per BTr Report, as of 13 Mar 2003			$G_M = (G_E / T) \times P424,007$ where: $E_M$ = Estimated Collection in 2003 for month M based on consolidated Region's estimates $T$ = Total Estimated Collection in 2003 for all tax types based on consolidated Region's estimates C. Total Collection By Implementing Office (Table 3) In general, 11.21% rate of increase was applied on the region's refined 2002 collection, net of the collections of the ff: 1. TRAs for w/c zero growth was assumed; and 2) Special Taxes (i.e., taxes on T-Bills, Travel Tax Stock Transactions Tax and Excise Taxes), goals for which were taken from the NGRP estimates. D. Goal Allocation By Major Tax Type and By Implementing Office (See Tables 4 to 9) Using the ratio and proportion technique based on the revised estimates of implementing offices as aligned with the goals computed in items III.A.B and III.C above, the monthly goals by tax type were allocated per implementing office. V. Revenue District Goal Allocation Revenue district goal allocation shall be based on the distribution provided in the revised revenue estimates submitted last Feb 2003; Stat Div shall prepare the RDO goal following the procedure used in the regional goal allocation.		

ANNEX "A": COMPENDIUM OF PAST AND EXISTING METHODOLOGIES ON REVENUE GOAL ALLOCATION, BIR, *continued*

Calendar Year	Source / Date	Data Used	Allocation Methodology				Pages of Source Document/ Accompanying Attachments on Details/ Results
			In Goal Allocation	Assumptions	Level	Procedure / Analytical Tool	
2004	RMO 6-2004/ 13-Feb-2004	1. Refined CY 2003 collection by implementing office, considered the ff:  a) CY 2003 Collection of implementing offices per 12.09 Report of 19-Jan-03	Legislative measures cover two taxes:  1) Excise Taxes – for the Rationalization of Excise Tax on Motor Vehicles, and	Revenue Region	A. Total Goal, By Major Tax Type (see Table 1) -CY 2004 total goal (existing and legislative measures) by major tax type was based on the figures in the 2004 NGRP of the DOF;	RD goal allocation shall be based on the distribution provided in the revenue estimates submitted by RRs last Jan 2004; Stat Div shall prepare the RDO foal allocation following the procedure used in the regional goal allocations.	Source Document Table 1 – Total Collection Goal By Major Tax Type, CY 2004 Table 2 – Monthly Collection Goal By Major Tax Type, CY 2004 Table 3 – Total Collection Goal BY Implementing Office, CY 2004
		i) CY 2003 TRA Collections by implementing office (RAD, 5-Feb-04)  ii) Collections from transferred-out taxpayers accounting for at least 5% of the district's total collection and corresponding collections from such taxpayers to be transferred-in to others  (iii) Collection from non-recurring transactions (e.g. deficiency taxes, taxes on one-time transactions) accounting for at least 10% of the district's total collection for a particular month	2) Other Taxes – Rationalization on Documentary Stamp Tax  Special Taxes were refined from 2003 collections; were directly allocated to the implementing offices concerned:  a) Goal for existing and legislative measures on Excise Taxes is solely allocated to LTS		B. Monthly Collection Goal, BY Major Tax Type (See Table 2) 1) Existing Measures - CY 2004 total target for existing measures was allocated monthly based on the refined monthly distribution of total collection for CY 2003; thus for a particular Month <i>M</i> and Tax Type <i>N</i> , the total goal $G_{MN}$ is computed as follows: $G_{MN} = D \times P471,136M$ where: = % Share of collection in CY2003 of Tax Type <i>N</i> for month <i>M</i>		Table 4 – Collection Goal, By Implementing Office and Major Tax Type, CY 2004 Table 5 – Monthly Collection Goal By Implementing Office, CY 2004 Total Taxes Table 6 – Monthly Collection Goal By Implementing Office, CY 2004, Income Taxes Table 7 – Monthly Collection Goal By Implementing Office, CY 2004 Value-Added Taxes Table 8 – Monthly Collection Goal By Implementing Office, CY 2004 Percentage Taxes Table 9 – Monthly Collection Goal By Implementing Office, CY 2004 Other Taxes
		iv) Closures of establishments/  termination of business transactions; and (v) Closures from special taxes (Excise Taxes, Tax on T-Bills, Travel Tax and Stock Transactions Tax)	b) Goals on tax from T-bills  and Travel Tax per NGRP are allocated to RR6 since it has jurisdiction over BSP and DOT are located;  c) Goal on Stock Transaction under the Percentage Taxes is allocated to RR7 as PSE is within its jurisdiction.		2) Monthly goals on legislative measures for Excise Taxes on Automobiles and DST were allocated based on the monthly share of total collection for the year 1999, 2001-02, and added to the existing goals for Excise Taxes and Other Taxes; thus, for Tax Type N in a particular Month M, the total goal $G_{MN}$ is computed as follows: $G_{MN} = G_{MN} \times G_{NTOTAL}$ where: $G_{MN}$ = Average share of collection for Tax Type N in years 1999, 2001-02 for a particular month M $G_{NTOTAL}$ = Total goal in 2004 for Tax Type N = NGRP projection		
		2) Distribution of CY 2003 refined collection, by month;  3) Consolidated CY 2004 Estimates of Implementing Offices (26-Jan-2004)			C. Total Collection Goal, By Implementing Office (Table 3) - In general, a 19.60% rate of increase was applied on the region's refined 2003 collection, net of collections from the ff:		
		4. NGRP dated 24-Jan-2004;	d) CY 2003 collection through TRAs was assumed to be equal to CY 2003		1. TRAs for which zero growth; and  2. Special taxes (i.e., taxes on T-Bills, Travel Tax, Stock Transactions Tax and Excise Taxes) goals for which were taken from the NGRP estimates.		
		5. CY 2003 Collections by GFS Classification per BTr Report of 26-Jan-2004	collection across all implementing offices		D. Goal Allocation, BY Major Tax Type and By Implementing Office (See Tables 4 to 9) - Using the ratio and proportion based on the consolidated estimates of implementing offices, as aligned with the goals computed in items III.A, III.B and III.C above, the monthly goals by tax type were allocated per implementing office.		
		6. Average distribution of monthly collection for the years 1999, 2001-02					

**ANNEX "A": COMPENDIUM OF PAST AND EXISTING METHODOLOGIES ON REVENUE GOAL ALLOCATION, BIR, *continued***

Calendar Year	Source / Date	Data Used	Allocation Methodology				Pages of Source Document/ Accompanying Attachments on Details/ Results
			Assumptions	Level	Analytical Tool / Procedure	Sub-level	
2005	RMO 2-2005/ 17-Jan-2005	1. Collection data for CY 2004 based on the tentative reports submitted by the regions to the Planning Divisions as of 13-Jan-2005:	CY 2005 total goal (existing, legislative and administrative measures) by major tax type was based on the figures in	Revenue Regions	A. Total Goal, By Major Tax Type (Table 1) - Collection goal on legislative measures is composed of the ff:	A report on the above allocation among the	RMO (4 pp.) Table 1: Total Collection Goal By Major Tax Type, CY 2005 (1 p.) Table 2: Monthly Collection Goal By Major Tax Type,
		(i) Collections from TRAs by imple-	the 2005 NGRP of DOF;		1)Rationalization of Excise Tax on Motor Vehicles;	the	CY 2005 (1 p.) Table 3: Total Collection Goal BY Implementing
		menting office for Jan-Nov 2004 and Dec 2003 (per RA,D13-Jan-2005) ii) Collections from GOCCs and LGUs by implementing office CY 2004 (per LTS) and W/holding Tax Division; and iii) Collections from special (Excise Taxes, Tax on Treasury Bills, Travel Tax and Stock Transaction Tax) per tentative report of RRs and the LTS of 13-Jan-2005	Collection goal for administrative measures cover additional revenues from Expanded Third Party Information (TPI)-Integrated Tax System Computer Matching, audit of ecozone locators and GOCCs, among others		2) Rationalization of Documentary Stamp Tax; and 3) Indexation of sin products	RDOs/LT units shall be submitted to the	Office, CY 2005 (1 p.) Table 4: Collection Goal, By Implementing Office and Major Tax Type, CY 2005 (1 p.) Table 5 – Monthly Collection Goal By Implementing Office, CY 2005 Total Taxes (1 p.) Table 6 – Monthly Collection Goal By Implementing Office, CY 2005, Income Taxes (1 p.) Table 7 – Monthly Collection Goal By Implementing Office, CY 2005 Value-Added Taxes (1 p.) Table 8 – Monthly Collection Goal By Implementing Office, CY 2005 Percentage Taxes (1 p.) Table 9 – Monthly Collection Goal By Implementing Office, CY 2005 Other Taxes (1 p.)
		3. Distribution of CY 2004 refined collection by month	Treatment of Goal on Special Taxes, TRAs and GOCCs/LGUS		B. Monthly Collection Goal, Major Tax Type (Table 2) - For the remaining types, CY 2005 goal was allocated monthly based on the refined monthly collection distribution (Net of particular Month M and Tax Type N, the total goal GMN is computed as follows: Special Taxes) of CY 2004; thus, a $GMN = D_{MN} \times P547,499M$	Asst. Commissioner, PPS/Stat Div	
		4. Excise Tax Estimates of 13-Jan-2005 (per LTS)  5. Distribution of CY 2004 BIR Collections by GFS Classification per BTr Report for Jan-Nov 2004 and goal for the month of Dec 2004	a) The total goal for existing and legislative measures on Excise Taxes is solely allocated to the LTS  b) Goals on tax from T-bills and Travel Tax are allocated to RR6 where BSP and DOT are located		where: $D_{MN}$ = percent share in CY 2004 collection of Tax Type N for a month M  C. Total Collection Goal, By Implementing Office (Table 3)  In general an 18.3% rate of increase was applied on the region's refined average of collection and goal CY 2004, which was net of collection from the following:		
		6) NGRP of 12-Jan-2005			1. TRAs (TRAs), GOCCs and LGUs, for which zero growth was assumed; 2. Special taxes (i.e., taxes on T-Bills, Travel Tax, Stock Transactions Tax and Excise Taxes), goals for which were taken from the NGRP estimates.		
		CY 2004 monthly goal for Excise Taxes was based on the figures given to LTS	c) Transactions Tax is allocated to RR 7 where PSE is located.  d) TRAs, LGUs/ GOCCs		D. Goal Allocation, By Major Tax Type and By Implementing Office (Tables 4 and 9) based on the BIR 12.09 Report of 2004 collection, as aligned with the goals computed in items III.A, III.B and III.C above, the monthly goals by tax type were allocated per implementing office.		

**ANNEX "A": COMPENDIUM OF PAST AND EXISTING METHODOLOGIES ON REVENUE GOAL ALLOCATION, BIR, *continued***

Calendar	Source /	Data Used	Allocation Methodology				Pages of Source Document/
Year	Date	In Goal Allocation	Assumption/s	Level	Analytical Tool / Procedure	Sub-level	Accompanying Attachments on Details/ Results
2006	RMO 26-2006/30-Oct 2006	1. Baseline Figures: CY 2005 (per BIR 12.09 Reports from RAD) of 28-Apr-2006	1. CY 2006 total BIR Goal by Major Tax Type from existing measures and R. A. 9337  (New VAT Law was based		- The goal for R.A. 9337 per specific measures as enumerated in Annex B was allocated to concerned implementing offices	The preliminary goal allocation for each RDO shall be prepared by the Stat Div in coordination with respective Regional Offices and other concerned offices.	RMO ( pp.), Annex A: Total Collection Goal, For Existing Measures and For R. A. 9337, BY Major Tax Type, CY 2006 (1p.) Annex B: Breakdown of Goal for RA 9337 (New VAT
		2. Collection Refinements a. Actual CY2005 collection on TRAS of NGAs by implementing office (per Stat. Div's report of 07-Aug-2006	on the NGRP as provided by DOF (See Annex A)  2. For the remaining tax types,		proportionately, following the bases for allocation (Annex E) of which the results are shown in (Annex D)		Law), By Specific Measures, CY 2006 (1 p.) Annex C: Monthly Collection Goal, BY Major Tax Type, For Existing Measures and For R.A. No. 9337 (New VAT Law) From BIR Operations and From Non-
		b. CY 2005 collections on With holding Taxes of GOCCs and LGUs by implementing office (per Stat Div's Report of 07-Aug-2006) c) CY 2005 collection on Tax from T-Bills, Travel Tax, Stock Transactions, Estate and Documentary Stamp (DST) on government securities (per RAD, 28-Apr-2006) d) Non-recurring transactions representing 10% of the district's total collection for a particular month for a single transaction, whichever is lower, per report of implementing office as of 30-Aug-2003); and	monthly goal allocation was based on estimated 2005 monthly trend and adjustments for likely CY 2006 trend due to the deferment of implementation of the New VAT Law and revenues from 2006 wok programs ( Feb 2006)  3. Collection goals from non-BIR Operations (i.e Taxes on T-Bills and corresponding DST, and Travel Tax) were distinguished from collection goals and BIR operation)		- Goal Allocation for Existing Measures (Annex F) was using CY 2005 collection was refined by deducting collections from ff:  a. TRAs for NGAs b. Withholding taxes of GOCCs and LGUs. c. Non-recurring transactions d. Special taxes (i.e., taxes on T-Bills, Travel Tax, Stock Transactions, Excise Taxes and DST on gov't. securities; and e. Transferred taxpayers (net), i.e., transfer-out less transfer-in	Worksheets on details of computation of the allocation among RDO/units shall be provided by the Stat Div on the concerned Regional Office/LTS which has jurisdiction over said RDO/units.	BIR Operations, CY 2006 (1 p.) Annex: Collection Goal Allocation, Implementing Office, CY 2006 (1 p.0 Annex E: Basis of Allocation of Goal For R.A. No. 9337 (New VAT Law), Y Specific Measure, CY 2006 (1 p.) Annex F: Collection Goal Allocation For Existing Measures, By Implementing Office, CY 2006 (1 p.) Annex G: Growth Rates of CY 2005 Collection of BIR Implementing Offices and GRDP at Current Prices, Net OF Agriculture Sector, By NEDA Administrative Regions (1 p.) Annex H-1: Total Collection of Goal Allocation, For Existing Measures, By Implementing Office and Major Tax Type, CY 2006 (1 p.) Annex H-2: Monthly Total Collection Goal, For Existing Measures, BY Implementing Office, CY
		e) Transferred taxpayers (100% considered as reported by the implementing offices, updated and validated/verifies as of 13-Jul-2006)  3. Others: a) GRDP growth rate for CY 2005, at current prices, net of Agriculture Sector b) Excise Tax estimates prepared by the LTS of 30-Nov-2005	C. Goal Allocation, By Implementing Office (summarized in Annex D) Goal from BIR operations is distributed to the RRs and LTS, while the goal from non- BIR operations is allocated to the Office of the Commissioner; goals from existing measures and from R.A. 9337		2. Average of the growth rate actual collection for CY 2005 and the growth rate of the GRDP for CY 2005 at current prices, net of Agriculture (Annex G), was applied to the Refined Actual CY 2005 Collection, by implementing office  3. TRAs of NGAs were assumed to be equal to CY 2005 collection (i.e. 0% growth rate) across		2006 (1 p.) Annex H-3: Monthly Collection Goal for Income Tax For Existing Measures, By Implementing Office, CY 2006 (1 p.) Annex H-4: Monthly Collection Goal for Excise Taxes For Existing Measures By Implementing Office, CY 2006 (1 p.) Annex H-5: Monthly Collection Goal for Excise Taxes for Value-Added Tax, For Existing Measures By Implementing Office, CY 2006 (1 p.) Annex H:-6 Monthly Collection Goal for Percentage Tax, For Existing Measures By Implementing Office, CY 2006 (1 p.)
		c) Stock Transactions Tax (per RDOs' reports of 11-Jan-06)  d) RVAT Collection, Jan-Jun 2006 (per report of implementing office			implementing offices  4. For Withholding taxes of GOCCs and LGUs for CY 2006,5% growth rate from CY 2005 collection was assumed across the implementing offices		Annex H-7: Monthly Collection Goal for Other Taxes For Existing Measures BY Implementing Office, CY 2006 (1 p.) Annex I-1: Total Collection Goal for R.A. No. 9337, By Implementing Office and Major Tax Type, CY 2006 (1 p.) Annex I-2: Monthly Collection Goal for R.A. No. 9337, By Implementing Office, CY 2006 (1 p.)

ANNEX "A": COMPENDIUM OF PAST AND EXISTING METHODOLOGIES ON REVENUE GOAL ALLOCATION, BIR, *continued*

Calendar Year	Source / Date	Data Used as Basis for Goal Allocation	Allocation Methodology				Pages of Source Document/ Accompanying Attachments on Details/ Results
			Assumptions	Level	Analytical Tool / Procedure	Sub-level	
		e) Monthly Distribution of CY 2005 refined collection, by implementing office; and  f) Other available data peculiar to			5. The ff. taxes were allocated directly to the implementing offices  a. Goals on T-Bills, Travel and DST on Government Securities		Annex I-3: Monthly Collection Goal for Income Tax R.A. No. 9337, By Implementing Office, CY 2006 Annex I-4: Monthly Collection Goal for Value-added Tax For R.A. No. 9337, By Implementing Office, CY 2006 (1.P)
		each of the implementing offices that affect their collection trends  Data for CY 2006 shall refined collections, as well as other data/reports from implementing offices covering January-September 2006 submitted to the Stat Div as of 06-Oct-2006 shall be considered.			were allocated to the Office of the Commissioner  b. Goal on Excise Taxes was allocated to the LTS, while the goal on mining and quarrying was allocated to implementing offices, where applicable.  c. Goal on Stock Transaction Tax was allocated to the implementing offices where the stock brokers are registered using ratio and proportion		Annex I-5: Monthly Collection Goal for Percentage Taxes (Total) For R.A. No. 9337, By Implementing Office, CY 2006 Annex I-6: Monthly Collection Goal for Percentage Taxes (PT103 & PT104) For R.A. No. 9337, By Implementing Office, CY 2006 (1 p.) Annex I-7: Monthly Collection Goal for Percentage Taxes (Other Percentage Taxes) For R.A. No. 9337, By Implementing Office, CY 2006 (1 p.) Annex J-1: Total Collection Goal Allocation For Existing Measures and R.A. 9337, BY Implementing Office and Major Tax Type CY 2006 (1 p.) Annex J-2: Monthly Total Collection Goal For Existing Measures and R.A. 9337, By Implementing Office, CY 2006 (1 p.)
					6. Adjustment(s) were made to maintain the total goal set by DOF were considered as follows: a. Percent share of collection by implementing offices to total BIR collection in CY 2005 b. Expiration of entitlements to ITH by entitled taxpayers c. Trends of collection performance in 2006.		Annex J-3: Monthly Collection Goal For Income Tax For Existing Measures and R.A. 9337, By Implementing Office, CY 2006 (1 p.) Annex J-4: Monthly Collection Goal For Excise Tax For Existing Measures and R.A. 9337, By Implementing Office, CY 2006 (1 p.) Annex J-5: Monthly Collection Goal For Value-Added Tax For Existing Measures and R.A. 9337, By Implementing Office, CY 2006 (1 p.) Annex J-6: Monthly Collection Goal For Percentage Tax For Existing Measures and R.A. 9337, By Implementing Office, CY 2006 (1 p.)
					Aligned with the goals computed in items III.A, III.B and III.C, the monthly goals by tax type and by month were allocated to implementing offices using ratio and proportion based on the trend of Jan-Sep 2006 collection and Oct-Dec 2005 refined collection.		Annex J-6: Monthly Collection Goal For Other Taxes For Existing Measures and R.A. 9337, By Implementing Office, CY 2006 (1 p.)

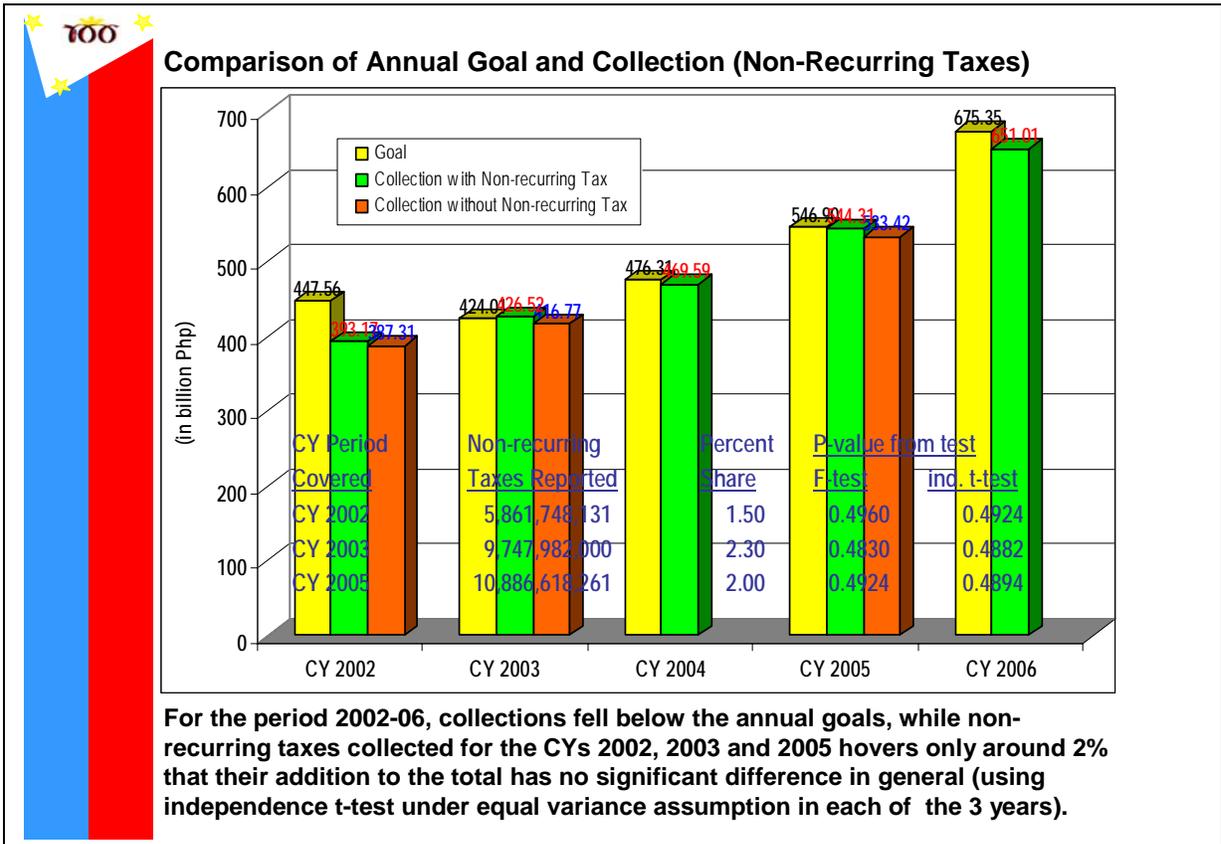
**Annex “B”**

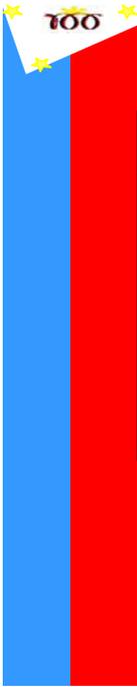
**PRESENTATION MATERIALS:  
COMMAND CONFERENCE OF BIR REGIONAL DISTRICT OFFICES,  
JANUARY 23, 2007**



# GOAL ALLOCATION PROJECT

## PRELIMINARY REPORT





### Summary Descriptives of Total Collection Per Region

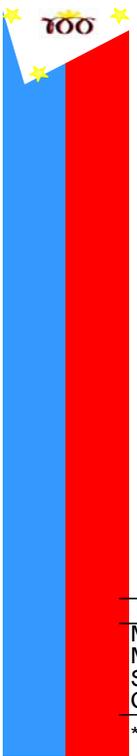
Statistic(s)	Total Collection				
	CY 2002	CY 2003	CY 2004	CY 2005	CY 2006
Mean (PhpB)	19.66	21.33	23.48	27.22	32.55
Median (PhpB)	2.99	2.88	3.22	4.07	5.25
Stand. Dev.	48.32	52.06	57.54	64.31	76.02
Coeff. Of Varn.* (%)	245.80	244.14	245.07	236.29	233.53
Range (Php)	215.58	231.48	256.79	285.32	335.89
Minimum (Php)	1.02	1.12	1.22	1.38	1.64
Maximum (Php)	216.60	232.59	258.01	286.70	337.52
Sum (Php)	393.17	426.52	469.59	544.31	651.01
Count	20	20	20	20	20

**Coefficient of Variation (CV) = (Standard Deviation / Mean)\*100%**

**Measure of relative dispersion and generally expressed as a percentage; being independent of the units used, it is useful in comparing distributions/populations**

**Used in comparing deviations of population with different mean or different unit of measurements (eliminates the effect of the unit of measurement)**

**A desirable CV is around 20%; it fails to be useful when mean is close to zero**



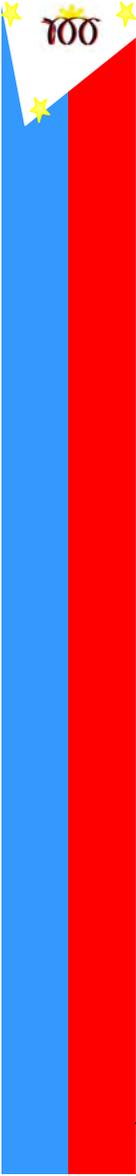
### Percent Difference of Collection from Goal [(C-G)/G\*100]

Revenue Region	CY 2002	CY 2003	CY 2004	CY 2005	CY 2006	Overall
1 CALASIAO, PANGASINAN	-0.04	-0.02	0.02	0.16	0.10	0.06
2 CORDILLERA ADMIN. REGION	-0.03	-0.05	0.00	0.24	-0.01	0.04
3 TUGUEGARAO, CAGAYAN	-0.02	-0.01	-0.03	-0.02	0.01	-0.01
4 SAN FERNANDO, PAMPANGA	-0.08	-0.03	-0.01	0.03	-0.01	-0.02
5 VALENZUELA, METRO MANILA	-0.08	0.00	-0.08	0.02	0.03	-0.02
6 MANILA	0.44	1.66	-1.44	0.48	-1.96	-0.33
7 QUEZON CITY	-0.57	0.14	-0.15	0.06	0.29	-0.01
8 MAKATI	-0.55	-0.04	0.15	-0.01	0.83	0.14
9 SAN PABLO CITY	-0.11	0.16	0.07	0.13	-0.12	0.02
10 LEGASPI CITY	-0.01	-0.03	-0.02	0.01	0.01	-0.01
11 ILOILO CITY	-0.02	-0.03	0.03	0.03	0.01	0.01
12 BACOLOD CITY	-0.08	0.03	0.01	0.00	0.00	0.00
13 CEBU CITY	-0.33	0.01	0.04	0.07	-0.01	-0.04
14 TACLOBAN CITY	0.00	0.09	0.14	0.00	0.00	0.04
15 ZAMBOANGA CITY	-0.04	0.01	0.00	-0.02	0.01	-0.01
16 CAGAYAN DE ORO CITY	-0.05	-0.03	-0.02	0.01	0.01	-0.01
17 BUTUAN CITY	-0.02	0.01	0.00	0.00	0.01	0.00
18 COTABATO CITY	-0.03	-0.05	0.01	0.00	0.02	-0.01
19 DAVAO CITY	-0.08	0.01	0.02	0.03	0.00	0.00
20 LARGE TAXPAYERS' CENTER	-10.47	-1.24	-0.17	-1.71	-2.81	-3.16

Statistics	CY 2002	CY 2003	CY 2004	CY 2005	CY 2006	Overall
Mean	-0.61	0.03	-0.07	-0.02	-0.18	-0.17
Median	-0.04	0.00	0.00	0.01	0.01	-0.01
Standard Deviation	2.33	0.48	0.33	0.41	0.79	0.71
CV*	-383.48	1615.50	-468.34	-1750.41	-439.11	-426.71

\*refer in absolute terms, that if collection and goal are consistent, the smaller is the CV



**Revenue Gap: Difference of Collection to Goal [C – G]**

<u>Revenue Region (Php)</u>	<u>CY 2002</u>	<u>CY 2003</u>	<u>CY 2004</u>	<u>CY 2005</u>	<u>CY 2006</u>	<u>OVERALL</u>
1 CALASIAO, PANGASINAN	-170.4	-72.4	101.8	890.8	669.5	1,419.3
2 CORDILLERA ADMIN. REGION	-118.7	-219.6	11.9	1,301.5	-44.0	931.1
3 TUGUEGARAO, CAGAYAN	-73.5	-28.8	-139.6	-82.9	61.7	-263.1
4 SAN FERNANDO, PAMPANGA	-370.0	-121.0	-28.3	190.8	-80.6	-409.1
5 VALENZUELA, METRO MANILA	-346.5	16.2	-388.1	86.0	187.6	-444.8
6 MANILA	1,952.6	7,036.5	-6,840.3	2,625.6	-13,258.0	-8,483.6
7 QUEZON CITY	-2,547.9	598.7	-700.7	303.3	1,965.9	-380.7
8 MAKATI	-2,466.5	-164.2	721.8	-74.2	5,578.4	3,595.3
9 SAN PABLO CITY	-484.9	681.0	349.6	711.1	-827.3	429.4
10 LEGASPI CITY	-58.6	-129.7	-95.5	61.4	54.9	-167.5
11 ILOILO CITY	-69.5	-124.1	151.9	157.8	40.9	157.0
12 BACOLOD CITY	-360.3	146.8	66.6	11.6	18.0	-117.3
13 CEBU CITY	-1,482.6	30.6	175.2	398.0	-37.7	-916.4
14 TACLOBAN CITY	20.7	367.6	679.5	1.5	9.5	1,078.8
15 ZAMBOANGA CITY	-162.9	23.8	-21.6	-97.7	40.6	-217.8
16 CAGAYAN DE ORO CITY	-202.1	-127.2	-98.3	66.8	40.9	-320.0
17 BUTUAN CITY	-101.5	39.3	-13.5	23.8	58.4	6.4
18 COTABATO CITY	-150.6	-217.2	46.2	16.1	131.4	-174.0
19 DAVAO CITY	-347.1	28.9	97.2	190.0	29.8	-1.4
20 LARGE TAXPAYERS' CENTER	<u>-46,847.0</u>	<u>-5,256.8</u>	<u>-794.4</u>	<u>-9,373.5</u>	<u>-18,978.3</u>	<u>-81,249.9</u>
TOTAL	<b>-54,387.4</b>	<b>2,508.5</b>	<b>-6,718.6</b>	<b>-2,592.3</b>	<b>-24,338.5</b>	<b>-85,528.4</b>



## DEVELOPING FRAMEWORK FOR GOAL ALLOCATION

- Based on the use of relatively stable data (as to distribution and relevant to agency's structure), relative revenue potential could be measured in terms of share and annual growth.
- As share and growth are biased as to size factor and incremental effect, a more robust and fair measure to ascribe relative potential for each collection district must be explored.
- The summary statistics of the collection performance and revenue gap showed that the framework used is somewhat consistent in some years (relatively lower CV), the lowest being in CY 2002.

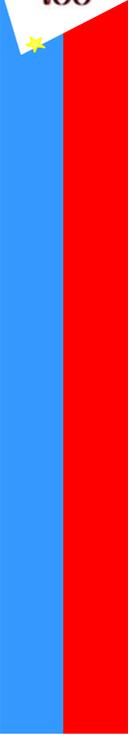
**CONTRIBUTION TO GROWTH**  
based on a reasonable period of time  
is therefore introduced as an alternative methodology along with **CLUSTERING**  
(of regions to address unstable data set)

**Contribution to Growth**

- both uses more than one period growth
- and adjust the data's size variation
- to come up with one coefficient for goal allocation

**Clustering** (as intuitively done in CY2002)

- facilitates goal assignment by pooling similarly situated revenue districts
- and allows a formal procedure of determining groupings
- to serve as a more stable basis of using historical performance



### Allocation Explored Using Contribution to Growth+ Share for CY 2006 (Clustered Data and Comparing Evaluation Diagnostics)

**Step 1: Define Clusters (Based on value or other variable of interest)**

**Step 2: Calculate total value, share and contribution to growth per cluster**

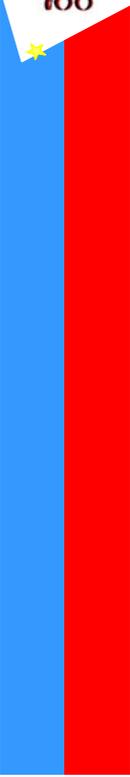
**Step 3: Compute the rate of contribution to growth over the total for the year for each of the cluster**

**Step 4: Derive the average of the rate of contribution to growth for the reference period (CY 2002-05)**

**Step 5: Allocate the total goal for the year using the rate of contribution to growth for the forecast year on a cluster basis**

**Step 6: For Clusters with multiple member (regions), allocate the total cluster share of the goal based on their respective share per cluster**

**Step 7: Compare the resulting CV of the previous framework**



### Illustrative Simulations on the Conceptual Frame for CY 2006



**Use of Contribution to Growth**

- > Average Contribution to Growth + Share of Clustered Data (Based on Collection Value)

**Clustering based on Historical Performance and Type of Taxes**

- > Without Clustering
- > Seven (7) Clusters
- > Ten (10) Clusters)

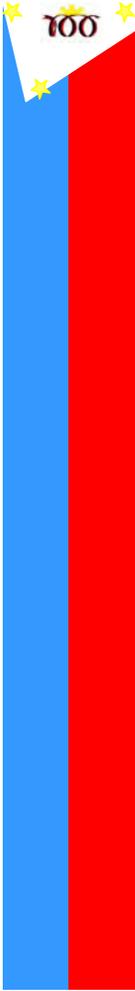
**Basis of Comparison Across Frameworks**





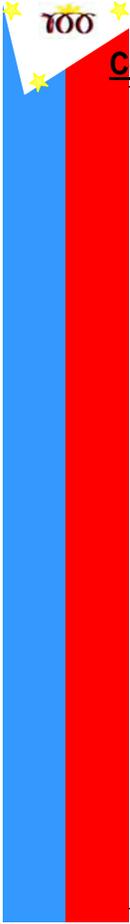
## Measure for Collection Per Revenue Region (%)

RR	SHARE					GROWTH				CONTRIBUTION TO GROWTH			
	CY 2002	CY 2003	CY 2004	CY 2005	CY 2006	CY2002-03	CY2003-04	CY2004-05	CY2005-06	CY2002-03	CY2003-04	CY2004-05	CY2005-06
1	0.71	0.66	0.69	0.81	0.93	0.23	14.86	36.85	37.72	0.00	0.10	0.25	0.31
2	0.50	0.41	0.43	0.65	0.39	-11.32	15.81	77.12	-29.35	-0.06	0.06	0.33	-0.19
3	0.35	0.33	0.31	0.29	0.28	4.55	2.32	9.63	12.78	0.02	0.01	0.03	0.04
4	1.38	1.34	1.38	1.39	1.41	4.95	13.37	17.08	21.18	0.07	0.18	0.24	0.30
5	1.49	1.42	1.44	1.52	1.47	3.03	12.23	21.97	16.00	0.05	0.17	0.32	0.24
6	11.47	12.57	10.94	12.49	10.55	18.88	-4.19	32.39	0.99	2.17	-0.53	3.54	0.12
7	9.20	8.89	9.12	9.32	10.00	4.79	13.03	18.43	28.34	0.44	1.16	1.68	2.64
8	9.69	9.72	10.12	10.19	12.74	8.80	14.63	16.73	49.56	0.85	1.42	1.69	5.05
9	3.89	4.12	4.40	4.56	4.36	14.96	17.64	20.08	14.27	0.58	0.73	0.88	0.65
10	0.52	0.48	0.47	0.46	0.44	-1.00	7.19	14.51	15.13	-0.01	0.03	0.07	0.07
11	0.68	0.65	0.68	0.68	0.68	2.91	16.08	14.95	19.86	0.02	0.10	0.10	0.13
12	0.53	0.53	0.57	0.57	0.52	8.74	17.62	16.42	8.26	0.05	0.09	0.09	0.05
13	1.23	1.21	1.26	1.29	1.34	6.64	14.43	19.29	24.21	0.08	0.17	0.24	0.31
14	0.51	0.57	0.62	0.54	0.51	20.83	21.13	0.44	11.86	0.11	0.12	0.00	0.06
15	0.33	0.33	0.33	0.29	0.29	8.56	7.80	4.04	20.20	0.03	0.03	0.01	0.06
16	0.81	0.69	0.69	0.69	0.64	-6.98	9.05	16.12	11.93	-0.06	0.06	0.11	0.08
17	0.26	0.26	0.26	0.25	0.25	10.01	9.02	13.31	18.50	0.03	0.02	0.03	0.05
18	0.45	0.41	0.43	0.41	0.40	-1.74	16.10	9.65	17.88	-0.01	0.07	0.04	0.07
19	0.90	0.89	0.93	0.91	0.95	6.49	15.09	13.72	24.36	0.06	0.13	0.13	0.22
20	55.09	54.53	54.94	52.67	51.85	7.39	10.93	11.12	17.73	4.07	5.96	6.11	9.34
TOTAL	100	100	100	100	100	8.48	10.10	15.91	19.60	8.48	10.10	15.91	19.60



**Clusters of Revenue Region Based on Total Collection**

<u>Total Collection</u> (Php B)	<u>CY 2002</u>	<u>CY 2003</u>	<u>CY 2004</u>	<u>CY 2005</u>	<u>CY 2006</u>
G4: 9 SAN PABLO CITY	15.28	17.57	20.67	24.82	28.36
G1: RR#1-5, 10-19	41.92	43.38	49.19	58.58	68.38
G2: 6 MANILA	45.10	53.61	51.37	68.00	68.68
G3: 7&8 QC and Makati City	74.27	79.36	90.36	106.20	148.08
G5: 20 LARGE TAXPAYERS' CENTER	<u>216.60</u>	<u>232.59</u>	<u>258.01</u>	<u>286.70</u>	<u>337.52</u>
TOTAL	<u>393.17</u>	<u>426.52</u>	<u>469.59</u>	<u>544.31</u>	<u>651.01</u>
<b><u>Share (%)</u></b>					
G4: 9 SAN PABLO CITY	3.9	4.1	4.4	4.6	4.4
G1: RR#1-5, 10-19	10.7	10.2	10.5	10.8	10.5
G2: 6 MANILA	11.5	12.6	10.9	12.5	10.5
G3: 7&8 QC and Makati City	18.9	18.6	19.2	19.5	22.7
G5: 20 LARGE TAXPAYERS' CENTER	<u>55.1</u>	<u>54.5</u>	<u>54.9</u>	<u>52.7</u>	<u>51.8</u>
TOTAL	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>
<b><u>Annual Growth (%)</u></b>					
	<u>2002-03</u>	<u>2003-04</u>	<u>2004-05</u>	<u>2005-06</u>	
G4: 9 SAN PABLO CITY	15.0	17.6	20.1	14.3	
G1: RR#1-5, 10-19	3.5	13.4	19.1	16.7	
G2: 6 MANILA	18.9	-4.2	32.4	1.0	
G3: 7&8 QC and Makati City	6.8	13.9	17.5	39.4	
G5: 20 LARGE TAXPAYERS' CENTER	<u>7.4</u>	<u>10.9</u>	<u>11.1</u>	<u>17.7</u>	
TOTAL	<u>8.5</u>	<u>10.1</u>	<u>15.9</u>	<u>19.6</u>	
<b><u>Contribution to Growth (%)</u></b>					
G4: 9 SAN PABLO CITY	0.6	0.7	0.9	0.7	
G1: RR#1-5, 10-19	0.4	1.4	2.0	1.8	
G2: 6 MANILA	2.2	-0.5	3.5	0.1	
G3: 7&8 QC and Makati City	1.3	2.6	3.4	7.7	
G5: 20 LARGE TAXPAYERS' CENTER	<u>4.1</u>	<u>6.0</u>	<u>6.1</u>	<u>9.3</u>	
TOTAL	<u>8.5</u>	<u>10.1</u>	<u>15.9</u>	<u>19.6</u>	



**Comparison of % Difference [(Collection-Goal)/G] Across Methodologies**

Revenue Region	Average of Contribution to Growth+Share for Clusters		Existing Methodology of BIR	
		CY 2006		CY 2006
1 CALASIAO, PANG.		30.8		12.39
2 CAR		-20.6		-1.72
3 TUGUEGARAO, CAG.		-15.0		3.54
4 SFDO. PAMP.		2.6		-0.87
5 VALENZUELA, M M		0.4		1.99
10 LEGASPI CITY		-7.4		1.94
11 ILOILO CITY		0.6		0.93
12 BACOLOD CITY		-7.7		0.54
13 CEBU CITY		8.8		-0.43
14 TACLOBAN CITY		-9.7		0.29
15 ZAMBOANGA CITY		-7.4		2.16
16 CDO CITY		-10.8		0.99
17 BUTUAN CITY		-3.8		3.70
18 COTABATO CITY		-5.3		5.28
19 DAVAO CITY		3.4		0.49
6 MANILA		-30.4		-16.18
7 QUEZON CITY		-3.3		3.11
8 MAKATI		15.2		7.21
9 SAN PABLO CITY		-36.5		-2.83
20 LTS		4.0		-5.32



### Descriptive Statistics for % Difference Across Methodologies\*

STATISTICS	EXISTING METHODOLOGY		PROPOSED ALTERNATIVE** (C2G W/ CLUSTERING)
	GOAL 2006 OPTION 1 (WITHOUT ITH)	GOAL 2006 OPTION 2 (WITH ITH)	
<i><b>DESCRIPTIVES</b></i>			
Mean (Php B)	<b>124.0</b>	<b>-1.5</b>	<b>-11.3</b>
Median (Php B)	<b>29.0</b>	<b>-2.2</b>	<b>-0.1</b>
Stand Dev (Php B)	<b>353.5</b>	<b>7.0</b>	<b>20.4</b>
Sample Variance	<b>124987.8</b>	<b>48.7</b>	<b>417.6</b>
Range	<b>1607.6</b>	<b>26.1</b>	<b>42.8</b>
Minimum	<b>0.0</b>	<b>-11.2</b>	<b>-36.5</b>
Maximum	<b>1607.6</b>	<b>14.9</b>	<b>6.3</b>
Sum (Php B)	<b>2480.5</b>	<b>-29.9</b>	<b>-56.7</b>
Count	<b>20</b>	<b>20</b>	<b>5</b>
<i><b>FRAMEWORK EVALUATION</b></i>			
CV	<b>447.21</b>	<b>447.21</b>	<b>180.35</b>
Pseudo-RMSE	<b>12.45</b>	<b>9.12</b>	<b>17.66</b>

\* Simulation Year is CY 2005 under the proposed alternative contribution to growth+Clustering  
 \*\* Based on Tentative Data as of 19 January 2007, with collection for Dec 2006 was imputed using the goal per region for December 2006.



### Other Measures of Goodness of Fit

Total Absolute Deviation - Collection Less Goal (a mean could be also used)

**T.A.D =  $\Sigma \text{ abs (Collection - Goal)}$**

Mean Deviation (M.A.D.) or Average Absolute Deviation – average of absolute deviation from the mean

**MAD =  $\{\Sigma \text{ abs [mean (Collection - Goal) - Goal]\}/n$**

Median Absolute Deviation (M. D. D.) Median Absolute Deviation – average absolute deviation from the median

**MDD =  $\{\Sigma \text{ abs [median (Collection - Goal) - Goal]\}/n$**

Mean Squared Error – measures the average of the squares of forecast errors (% Difference of Collection over Goal, in this context)

**RMSE =  $\Sigma(\text{Collection - Goal})^2/n$**

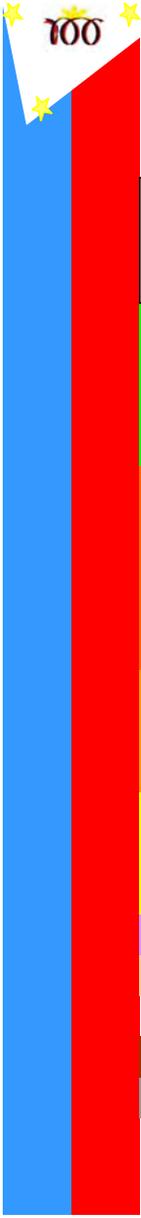
Mean Absolute Percent Error – used to convey the accuracy of the model, the average of the forecast errors expressed as a percentage of the actual observation, values of 5% or lower are desired (pseudo-form since the prediction is not model-based).

**MAPE =  $|\{[(\text{Collection - Goal})/\text{Goal} \times 100] / n\}|$**

Root Mean Squared Error (RMSE) = square root of MSE (pseudo if not actual model)

**RMSE =  $\text{sqrt} [\{(\text{Collection - Goal})^2/n\}]$**

\*In choosing between two model/frameworks, the RMSE should be used.



### Further Simulation Results Using Data (Tentative with Tax on T-Bill and Travel Tax Reverted to RR#6, Tax on Stock Transaction Credited to RR#7, and Excise Taxes Assigned to LTS' Excise Service Center)

RR	<i>With 10 Clusters</i>				Using 7 Clusters				Without Clustering Used			
	CY2006 Actual Collection	SimCY2006 Goal	Revenue Gap	% Difference From Goal	RR	SimCY2006 Goal	Revenue Gap	% Difference From Goal	RR	SimCY2006 Goal	Revenue Gap	% Difference From Goal
1	6.09	4.20	1.90	45.24	1	4.49	1.60	35.62	1	5.71	0.38	
11	4.41	3.95	0.46	11.64	2	3.11	-0.55	-17.77	2	4.44	-1.88	-4
16	4.17	4.21	-0.04	-1.06	3	2.02	-0.24	-11.89	3	1.01	0.77	7
19	6.11	5.32	0.79	14.83	10	3.03	-0.12	-4.07	4	9.04	0.14	
2	2.56	3.67	-1.11	-30.27	11	4.23	0.18	4.26	5	9.53	0.07	
10	2.90	3.86	-0.96	-24.77	12	3.42	-0.12	-3.62	6	94.44	3.68	
12	3.30	3.89	-0.59	-15.20	14	3.46	-0.17	-4.93	7	67.79	-3.16	
14	3.29	3.59	-0.30	-8.38	15	2.02	-0.11	-5.52	8	78.17	5.53	
18	2.62	3.33	-0.71	-21.26	16	4.51	-0.34	-7.64	9	43.79	-15.75	-3
3	1.78	1.58	0.20	12.67	17	1.62	-0.03	-1.79	10	1.55	1.35	8
15	1.91	1.52	0.39	25.79	18	2.67	-0.05	-1.87	11	4.25	0.16	
17	1.59	1.17	0.42	35.85	19	5.70	0.41	7.24	12	4.53	-1.23	-2
4	9.18	9.74	-0.57	-5.83	4	9.39	-0.22	-2.31	13	9.34	-0.52	
13	8.82	8.64	0.18	2.12	5	10.02	-0.42	-4.15	14	5.99	-2.70	-4
5	9.61	9.53	0.07	0.77	13	8.50	0.32	3.78	15	1.53	0.39	2
6	98.12	94.44	3.68	3.90	6	94.44	3.68	3.90	16	1.41	2.76	19
7	64.64	67.79	-3.16	-4.65	7	67.79	-3.16	-4.65	17	1.73	-0.14	
8	83.70	78.17	5.53	7.08	8	78.17	5.53	7.08	18	1.83	0.79	4
9	28.04	43.79	-15.75	-35.97	9	43.79	-15.75	-35.97	19	6.31	-0.20	
20	340.66	322.96	17.70	5.48	20	322.96	17.70	5.48	20	322.96	17.70	

Note: group color in indicate cluster definition

**Simulation #2**

**Simulation #3**

**Simulation #4**

## **Annex “C”**

**PRESENTATION MATERIALS:  
BIR MANAGEMENT COMMITTEE MEETING,  
FEBRUARY 19, 2007**



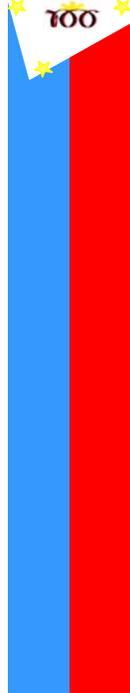
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**BIR Goal Allocation Project**

**“design a rational system for allocating the BIR revenue target to its districts, officials and employees”**

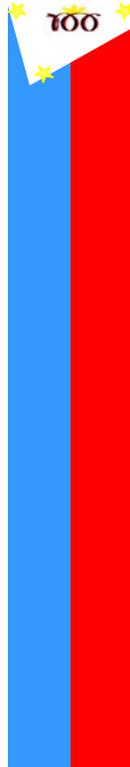
**Components:**

- (a) Baseline Study**
  - Past and Existing Goal Allocation
  - Analysis of Past Collection and Performance
  - Attributable Positions
- (b) Interim System: Proposed Goal Assignments for 2007**
- (c) Proposed Long-Term Allocation System: 2008 and beyond**



**Thrusts of the Goal Allocation:**

- ❖ Equitable
- ❖ Simple and transparent
- ❖ Formula-based (less ad-hoc)



**FRAMEWORK**

**Revenue Collection**  
 = (Revenue Capacity) x (Revenue Effort)

**Revenue capacity** - potential or maximum amount that could be collected by a revenue region or district office.

**Revenue effort** - effectiveness and efficiency of a region or district in extracting or collecting taxes from its revenue base

<b>Goal Setting</b>	<b>Goal Allocation</b>
<b>Revenue Capacity</b>	<b>Relative Revenue Capacity (RRC)</b>

**RRC:** ranking or position of each district relative to others



## **IRR, Sec 6. Allocation of Revenue Targets**

**Shall consider, among others, the following factors:**

- 1. Number of business establishments within the District and their historical sales and taxes paid;**
- 2. Number of firms in the District engaged in production/distribution of excisable products and their historical sales and taxes paid;**
- 3. Number of registered employers within the district, their total number of employees and the historical data on the withholding taxes paid**

**These factors should be the major determinants in setting the target revenue along with the historical record of revenue collection.**

**Shall likewise consider:**

- 1. Non-recurring transactions**
- 2. Transfer of taxpayers**



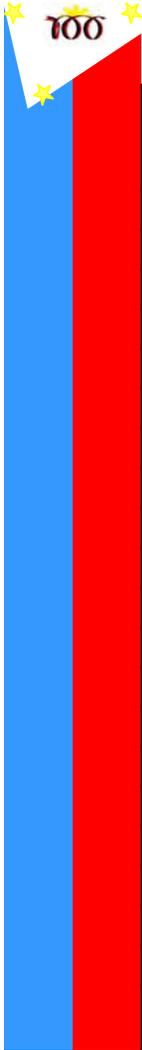
## Baseline Study: Highlights

Revenue Region	SHARE IN COLLECTION (PERCENT)					
	2002	2003	2004	2005	2006	Ave.
1 CALASIAO, PANGASINAN	0.71	0.66	0.69	0.81	0.93	0.76
2 CORDILLERA ADMIN. REG	0.5	0.41	0.43	0.65	0.39	0.48
3 TUGUEGARAO, CAGAYAN	0.35	0.33	0.31	0.29	0.28	0.31
4 SN FERNANDO, PAMP	1.38	1.34	1.38	1.39	1.41	1.38
5 VALENZUELA, M.M.	1.49	1.42	1.44	1.52	1.47	1.47
6 MANILA	11.47	12.57	10.94	12.49	10.55	11.60
7 QUEZON CITY	9.2	8.89	9.12	9.32	10	9.31
8 MAKATI	9.69	9.72	10.12	10.19	12.74	10.49
9 SAN PABLO CITY	3.89	4.12	4.4	4.56	4.36	4.27
10 LEGASPI CITY	0.52	0.48	0.47	0.46	0.44	0.47
11 ILOILO CITY	0.68	0.65	0.68	0.68	0.68	0.67
12 BACOLOD CITY	0.53	0.53	0.57	0.57	0.52	0.54
13 CEBU CITY	1.23	1.21	1.26	1.29	1.34	1.27
14 TACLOBAN CITY	0.51	0.57	0.62	0.54	0.51	0.55
15 ZAMBOANGA CITY	0.33	0.33	0.33	0.29	0.29	0.31
16 CAGAYAN DE ORO CITY	0.81	0.69	0.69	0.69	0.64	0.70
17 BUTUAN CITY	0.26	0.26	0.26	0.25	0.25	0.26
18 COTABATO CITY	0.45	0.41	0.43	0.41	0.4	0.42
19 DAVAO CITY	0.9	0.89	0.93	0.91	0.95	0.92
20 LARGE TAXPAYERS'	55.09	54.53	54.94	52.67	51.85	53.82
<b>TOTAL</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100.00</b>



## Baseline Study: Highlights

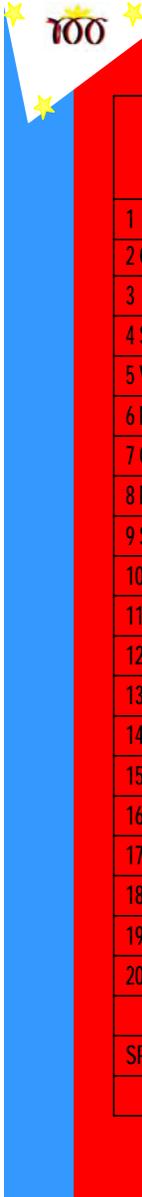
Revenue Region	GROWTH IN COLLECTION (PERCENT)				Ave.
	2002-03	2003-04	2004-05	2005-06	
1 CALASIAO, PANGASINAN	0.23	14.86	36.85	37.72	22.42
2 CORDILLERA ADMIN. REG	-11.32	15.81	77.12	-29.35	13.07
3 TUGUEGARAO, CAGAYAN	4.55	2.32	9.63	12.78	7.32
4 SN FERNANDO, PAMPANGA	4.95	13.37	17.08	21.18	14.15
5 VALENZUELA, M.M.	3.03	12.23	21.97	16.00	13.31
6 MANILA	18.88	-4.19	32.39	0.99	12.02
7 QUEZON CITY	4.79	13.03	18.43	28.34	16.15
8 MAKATI	8.8	14.63	16.73	49.56	22.43
9 SAN PABLO CITY	14.96	17.64	20.08	14.27	16.74
10 LEGASPI CITY	-1	7.19	14.51	15.13	8.96
11 ILOILO CITY	2.91	16.08	14.95	19.86	13.45
12 BACOLOD CITY	8.74	17.62	16.42	8.26	12.76
13 CEBU CITY	6.64	14.43	19.29	24.21	16.14
14 TACLOBAN CITY	20.83	21.13	0.44	11.86	13.57
15 ZAMBOANGA CITY	8.56	7.8	4.04	20.2	10.15
16 CAGAYAN DE ORO CITY	-6.98	9.05	16.12	11.93	7.53
17 BUTUAN CITY	10.01	9.02	13.31	18.5	12.71
18 COTABATO CITY	-1.74	16.1	9.65	17.88	10.47
19 DAVAO CITY	6.49	15.09	13.72	24.36	14.92
20 LARGE TAXPAYERS'	7.39	10.93	11.12	17.73	11.79
TOTAL	8.48	10.1	15.91	19.6	13.52



### Baseline Study: Highlights

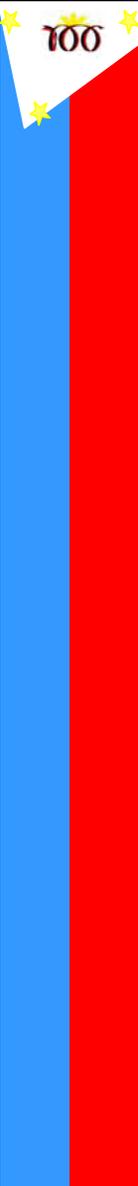
Revenue Region	CONTRIBUTION TO GROWTH IN COLLECTION (PERCENT)				
	2002-03	2003-04	2004-05	2005-06	Ave.
1 CALASIAO, PANGASINAN	0	0.1	0.25	0.31	0.17
2 CORDILLERA ADMIN. REG	-0.06	0.06	0.33	-0.19	0.04
3 TUGUEGARAO, CAGAYAN	0.02	0.01	0.03	0.04	0.03
4 SN FANDO, PAMPANGA	0.07	0.18	0.24	0.3	0.20
5 VALENZUELA, M.M.	0.05	0.17	0.32	0.24	0.20
6 MANILA	2.17	-0.53	3.54	0.12	1.33
7 QUEZON CITY	0.44	1.16	1.68	2.64	1.48
8 MAKATI	0.85	1.42	1.69	5.05	2.25
9 SAN PABLO CITY	0.58	0.73	0.88	0.65	0.71
10 LEGASPI CITY	-0.01	0.03	0.07	0.07	0.04
11 ILOILO CITY	0.02	0.1	0.1	0.13	0.09
12 BACOLOD CITY	0.05	0.09	0.09	0.05	0.07
13 CEBU CITY	0.08	0.17	0.24	0.31	0.20
14 TACLOBAN CITY	0.11	0.12	0	0.06	0.07
15 ZAMBOANGA CITY	0.03	0.03	0.01	0.06	0.03
16 CAGAYAN DE ORO CITY	-0.06	0.06	0.11	0.08	0.05
17 BUTUAN CITY	0.03	0.02	0.03	0.05	0.03
18 COTABATO CITY	-0.01	0.07	0.04	0.07	0.04
19 DAVAO CITY	0.06	0.13	0.13	0.22	0.14
20 LARGE TAXPAYERS'	4.07	5.96	6.11	9.34	6.37
TOTAL	8.48	10.1	15.91	19.6	13.5 2

Unit rewards ... to be determined based on a Unit's proportionate contribution to the aggregate income (Draft RMO on Rewards and Incentives)



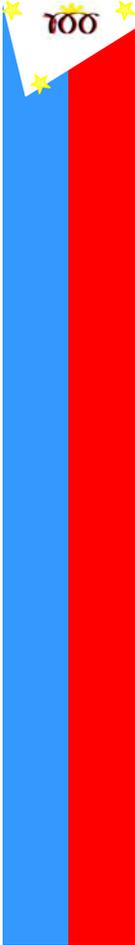
## Baseline Study: Highlights

Revenue Region	DIFFERENCE OF COLLECTON FROM GOAL (PMILLION)					
	2002	2003	2004	2005	2006 (RMO26)	CY2006 (RMO6)
1 CALASIAO, PANGASINAN	(177)	(73)	101	890	692	1,764
2 CORDILLERA ADMIN. REG	(120)	(222)	12	1,301	0	(110)
3 TUGUEGARAO, CAGAYAN	(75)	(30)	(140)	(83)	41	(59)
4 SN FERNANDO, PAMPANGA	(371)	(124)	(28)	191	(93)	(131)
5 VALENZUELA, M.M.	(369)	7	(391)	86	196	(1,931)
6 MANILA	(3,504)	7,332	(5,401)	4,535	(2,248)	3,085
7 QUEZON CITY	(2,279)	794	(702)	(1,251)	1,603	(385)
8 MAKATI	(2,562)	(200)	481	(75)	5,637	7,534
9 SAN PABLO CITY	(492)	666	336	708	(1,155)	(2,494)
10 LEGASPI CITY	(59)	(130)	(95)	61	81	54
11 ILOILO CITY	(70)	(125)	152	158	29	(409)
12 BACOLOD CITY	(367)	79	66	12	(36)	(710)
13 CEBU CITY	(1,486)	4	175	398	56	(198)
14 TACLOBAN CITY	(62)	301	679	1	16	(160)
15 ZAMBOANGA CITY	(164)	22	(22)	(98)	41	(144)
16 CAGAYAN DE ORO CITY	(203)	(130)	(102)	65	22	(355)
17 BUTUAN CITY	(111)	23	(14)	24	36	(33)
18 COTABATO CITY	(151)	(217)	46	16	133	(50)
19 DAVAO CITY	(353)	23	97	190	(18)	(233)
20 LARGE TAXPAYERS'	(36,891)	(3,503)	(8,746)	(10,276)	(14,403)	(14,403)
SUB-TOTAL	(49,865)	4,496	(13,496)	(3,146)	(9,367)	(9,367)
SPECIAL TAXES	(4,386)	(1,988)	6,777	554	(13,936)	(13,936)
TOTAL	(54,251)	2,508	(6,719)	(2,592)	(23,304)	(23,304)



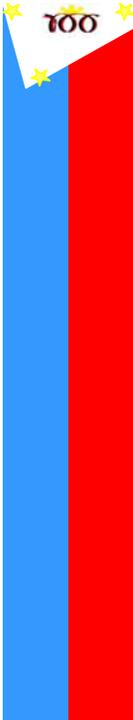
## Baseline Study: Highlights

Revenue Region	ABSOLUTE DIFFERENCE OF COLLECTON FROM GOAL (PMILLION)					
	2002	2003	2004	2005	2006 RMO26)	CY2006 (RMO06)
1 CALASIAO, PANGASINAN	177	73	101	890	692	1,764
2 CORDILLERA ADMIN. REG	120	222	12	1,301	0	110
3 TUGUEGARAO,CAGAYAN	75	30	140	83	41	59
4 SN FERNANDO, PAMP.	371	124	28	191	93	131
5 VALENZUELA, M.M.	369	7	391	86	196	1,931
6 MANILA	3,504	7,332	5,401	4,535	2,248	3,085
7 QUEZON CITY	2,279	794	702	1,251	1,603	385
8 MAKATI	2,562	200	481	75	5,637	7,534
9 SAN PABLO CITY	492	666	336	708	1,155	2,494
10 LEGASPI CITY	59	130	95	61	81	54
11 ILOILO CITY	70	125	152	158	29	409
12 BACOLOD CITY	367	79	66	12	36	710
13 CEBU CITY	1,486	4	175	398	56	198
14 TACLOBAN CITY	62	301	679	1	16	160
15 ZAMBOANGA CITY	164	22	22	98	41	144
16 CAGAYAN DE ORO CITY	203	130	102	65	22	355
17 BUTUAN CITY	111	23	14	24	36	33
18 COTABATO CITY	151	217	46	16	133	50
19 DAVAO CITY	353	23	97	190	18	233
20 LARGE TAXPAYERS'	36,891	3,503	8,746	10,276	14,403	14,403
SUB-TOTAL	49,865	14,006	17,787	20,420	26,536	34,242
SPECIAL TAXES	4,386	1,988	6,777	554	13,936	13,936
TOTAL	54,251	15,994	24,564	20,974	40,472	48,178



## Summary of Goal Allocation Procedure

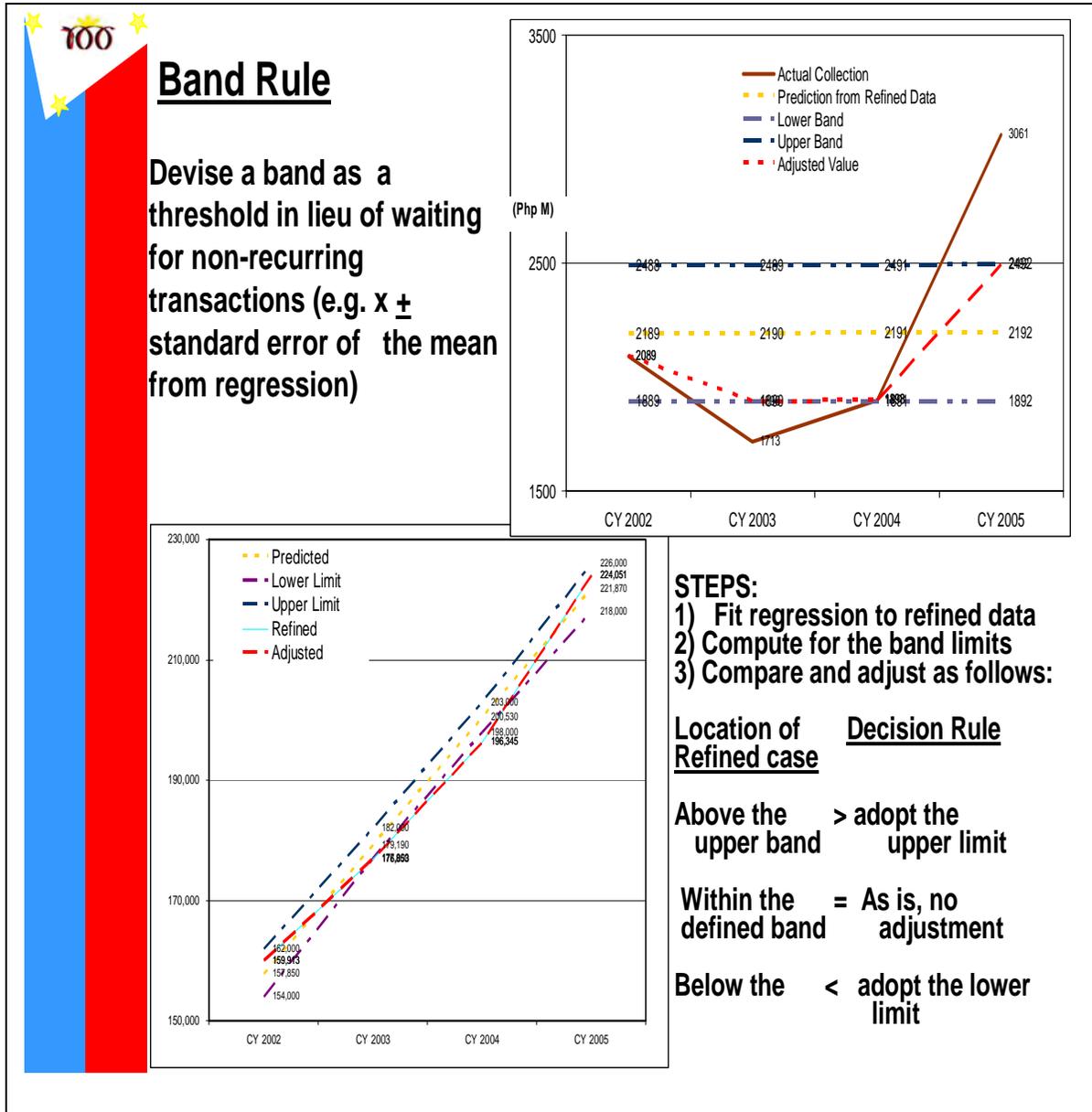
Operation	Item/s
	Actual Collection
-	TRAs
-	GOCC/LGUs
-	Non-Recurring Transactions
-	Transfer Out
-	Special Taxes
	Total
+	<u>Transfer-in</u>
	Refined Actual CY 2005 Collection
+	Average of Collection growth rate & GRDP growth rate (both CY 2005) Net of TRA, Special Taxes, GOCC/LGUs
+	TRAs (grow by zero or x-percent)
+	GOCC/LGUs (grow by x-percent)
+	Special Taxes (Travel Tax and DST on T-Bills)
+	Excise Tax
+	<u>Stock Transactions</u>
	Total
+	Adjustment (ε)
+	Total Existing Measure
	<u>Other Revenue from Laws of Special Interest</u>
	Total Goal

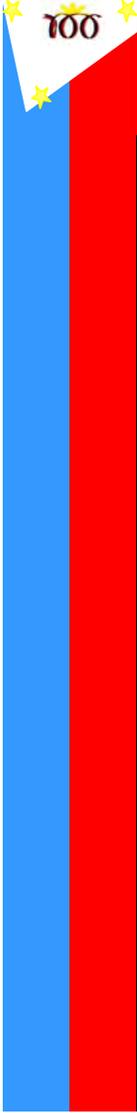


**Non-recurring transactions**

Definition (IRR, Sec 6.a):

Refer to one-time transactions which are substantial in amount (10% or more of a District's collections for a particular month), including the following: (i) capital gains taxes from the sales of real property or shares of stocks (on a per transaction basis), (ii) documentary stamp taxes, (iii) estate and donor's taxes, and (iv) special projects (e.g. voluntary assessment program)





## Netting out Non-recurring transactions

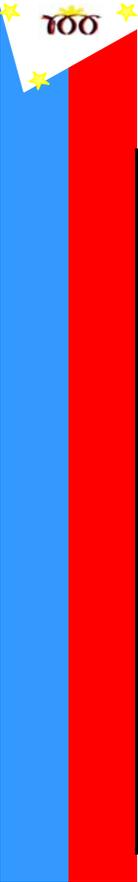
Operation	Item/s
	Actual Collection
-	TRAs
-	GOCC/LGUs
-	Non-Recurring Transactions
-	Transfer Out
-	Special Taxes
	Total
+	Transfer-in
	Refined Actual CY 2005 Collection
+	Average of Collection growth rate CY 2005 & GRDP growth rate (CY 2005)
	Net of TRA, Special Taxes, GOCC/LGUs
+	TRAs (grow by zero or x-percent)
+	GOCC/LGUs (grow by x-percent)
+	Special Taxes (Travel Tax and DST on T-Bills)
+	Excise Tax
+	Stock Transactions
	Total
+	Adjustment (€)
+	Total Existing Measure
	Other Revenue from Laws of Special Interest
	Total Goal



## Simulation Results

RR	Total Collection	Total Goal		Assigned Growth	Clustering,	C-G Per	C-Goal Per	Assigned Growth	Clustering,
		RMO -6	RMO -26	And Share	C2G +Share	RMO -6	RMO -26	And Share	C2G a+ Share
1	6,095	4,331	5,403	3,639	5,578	1,764	692	2,456	517
2	2,560	2,669	2,560	3,161	4,523	110	0	601	1,963
3	1,780	1,839	1,739	1,152	2,020	59	41	628	240
4	9,175	9,306	9,268	7,831	9,583	131	93	1,345	407
5	9,608	11,539	9,411	9,965	10,494	1,931	196	357	886
6	35,153	32,069	37,401	34,726	39,326	3,085	2,248	427	4,172
7	64,294	64,679	62,691	55,984	61,451	385	1,603	8,310	2,842
8	81,815	74,280	76,177	69,123	71,652	7,534	5,637	12,692	10,163
9	28,030	30,523	29,185	30,292	32,109	2,494	1,155	2,262	4,079
10	2,903	2,849	2,823	1,771	3,115	54	81	1,132	212
11	4,406	4,815	4,377	3,498	4,649	409	29	908	244
12	3,296	4,006	3,332	3,196	3,923	710	36	100	627
13	8,813	9,011	8,757	8,347	8,918	198	56	466	105
14	3,293	3,453	3,278	2,355	3,826	160	16	938	533
15	1,912	2,056	1,871	1,163	2,025	144	41	750	113
16	4,167	4,522	4,145	3,497	4,737	355	22	670	570
17	1,587	1,620	1,550	988	1,735	33	36	599	148
18	2,619	2,670	2,486	1,688	2,796	50	133	931	177
19	6,109	6,343	6,127	4,945	6,295	233	18	1,164	186
20	282,384	296,786	296,786	299,953	290,611	14,403	14,403	17,569	8,227
<b>Total</b>	<b>560,000</b>	<b>569,367</b>	<b>569,367</b>	<b>547,273</b>	<b>569,367</b>	<b>9,367</b>	<b>9,367</b>	<b>12,727</b>	<b>9,367</b>
<b>Total Absolute Deviation</b>						<u>43,609</u>	<u>35,903</u>	<u>67,032</u>	<u>45,780</u>

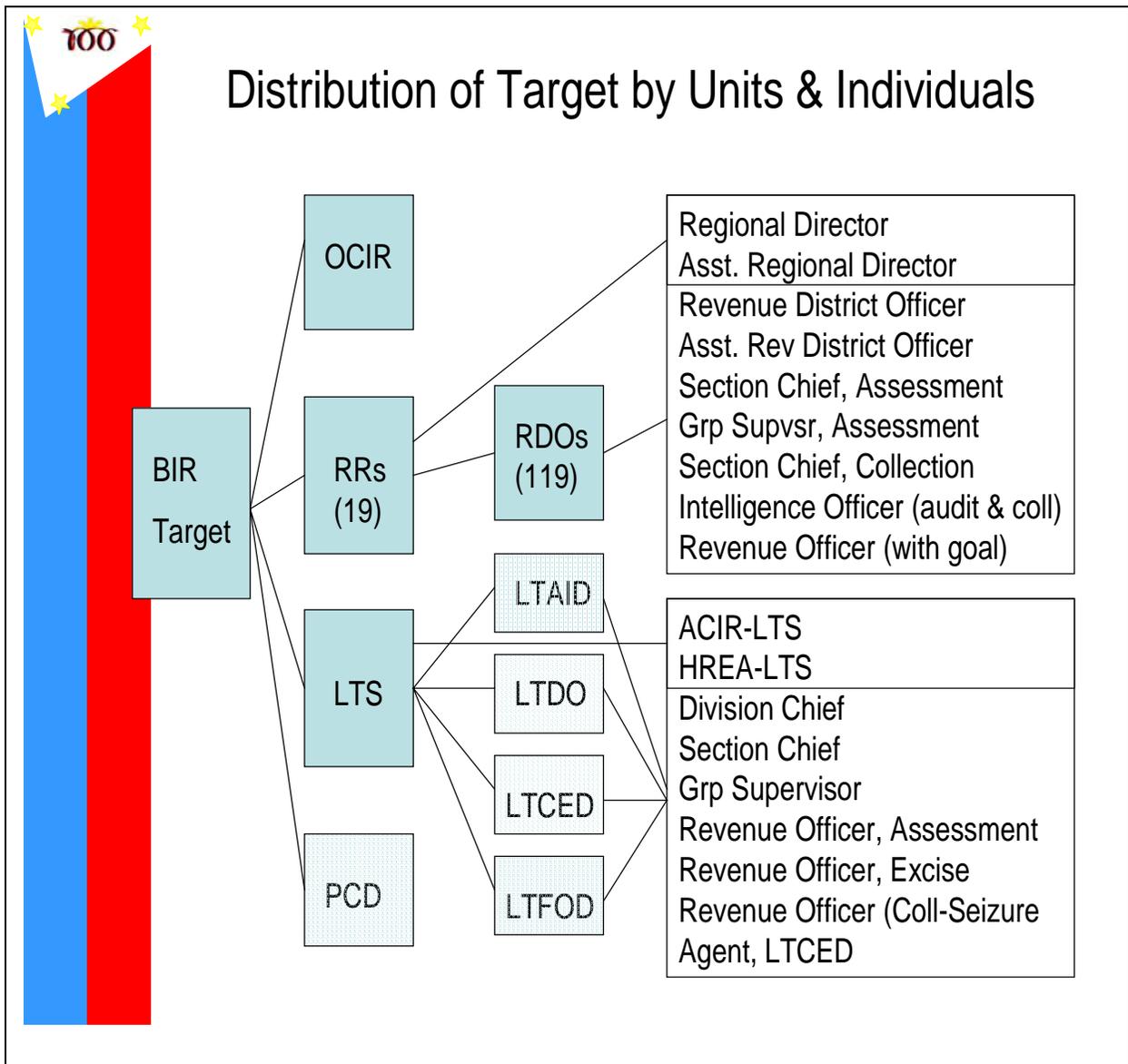
Simulation  
#5

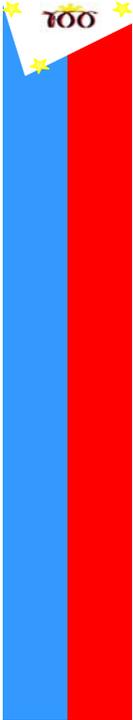


**Draft RMO on Attrition of Personnel**

Section C. 1 Procedures on Allocation of Target

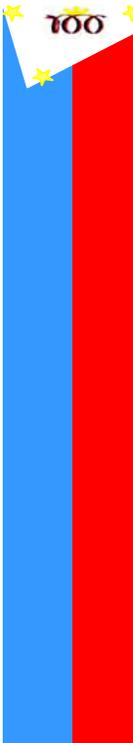
<b>Officials</b>	<b>Responsibilities</b>
DCIR-OG	Prepare & present to ManCom proposed goal distribution among units, officials and employees in OG
ACIR-LTS	Prepare & present to ManCom proposed goal distribution among units, officials and employees in LTS
ACIR-CS	Distribution of collection goals from voluntary compliance shall be divided to collection personnel, after equitable distribution of collection personnel to various collecting units as certified by ACIR-CS
ACIR-AS	Distribution of collection goals from assessment & audit shall be divided to assessment personnel, after equitable distribution of assessment personnel to various assessment units as certified by ACIR-CS
ACIR-PPS	Consolidate distribution of goal and spearhead preparation of RMO for distribution of goal to units, officials and personnel





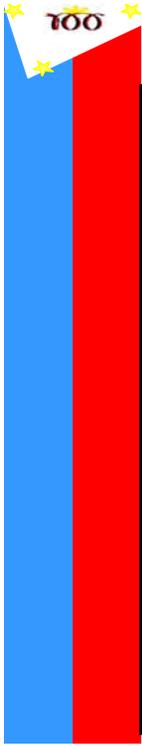
## Goal Distribution Parameters

- ❖ **Unit target** = Target of Head and Asst Head of Unit
- ❖ **Unit target** = Voluntary Collection Target + Assessment Collection Target
- ❖ **Voluntary Collection Target** = sum of the targets of ROs with collection function
- ❖ **Assessment Collection Target** = sum of the targets of ROs with assessment and audit functions



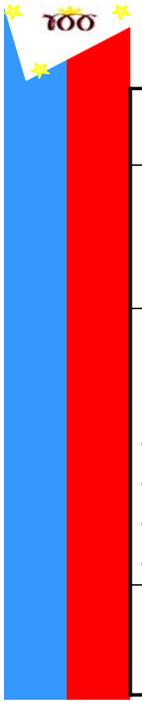
## Collection by Manner of Payment

Year	Million Peso			Percent		
	Voluntary Payments	Prelim/Final Assessments	Delinquent Accts	Voluntary Payments	Prelim/Final Assessments	Delinquent Accts
2002	391,901	2,390	258	99.33	0.61	0.07
2003	424,800	1,453	262	99.60	0.34	0.06
2004	468,497	818	273	99.77	0.17	0.06
2005	541,981	2,071	255	99.57	0.38	0.05
2006	649,495	2,203	351	99.61	0.34	0.05

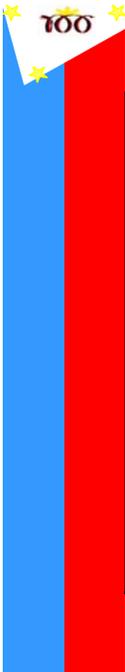


### Work Plan

Activities	Lead Unit/Person	Due Date
1. Prepare RMO for allocation of BIR goal to LTS, RRs and RDOs	PPS	Feb26
2. Identify the different units with collection targets	DCIR-OG, ACIR-LTS, RDs, RDOs	Feb26
3. Identify the different individuals to be assigned collection target <b>Note:</b> It is not the official designation or title of the position that determine who would be given collection target but the actual duties performed (e.g. assessment, audit, or collection)	DCIR-OG, ACIR-LTS, RDs, RDOs	Feb 28
4. Distribute collection personnel equitably among various collecting units to be certified by ACIR-Collection Service		Mar2



Activities	Lead Unit/Person	Due Date
5. Distribute assessment personnel equitably among various assessment units to be certified by ACIR-Assessment Service		Mar2
6. Focus Group Discussions with representatives of: Regional Directors/Asst.RDs <ul style="list-style-type: none"> <li>• Revenue District Officers/ARDOs</li> <li>• Assessment Officers</li> <li>• Collection Officers</li> <li>• Intelligence Officers</li> </ul>	PPS, EMERGE	Feb27- Mar2
7. Prepare & present to ManCom proposed distribution of targets among Units, Officials & Employees of LTS	ACIR-LTS	Mar9



Activities	Lead Unit/Person	Due Date
8. Prepare & present to ManCom proposed distribution of targets among Units, Officials & Employees of OG	DCIR-OG	Mar16
9. Prepare report (RMO) on the distribution of revenue target among revenue districts (regions) for CIR's approval and submission to DBCC	PPS	Feb26
10. Prepare report (RMO) on the distribution of revenue targets among officials and employees for CIR's approval and submission to the Board	PPS	Mar25

## **Annex “D.1”**

### **STATISTICAL/ COMPUTATIONAL NOTES 1: OUTLINE OF ALTERNATIVE APPROACHES EXPLORED FOR REVENUE GOAL ALLOCATION**

**SECTIONS**

**A. OUTLINE OF ALTERNATIVE APPROACHES EXPLORED FOR REVENUE GOAL ALLOCATION**

**B. STEPS IN THE SELECTED ALTERNATIVE APPROACH TO REVENUE GOAL ALLOCATION**

## **A. OUTLINE OF ALTERNATIVE APPROACHES EXPLORED FOR REVENUE GOAL ALLOCATION**

1. ***Computational Issues Covered.*** Based on the review of the previous methodologies from CY 1993 to CY 2006 and prospective formula for CY 2007, the following statistical procedures were applied on the historical data of revenue collections from CY 2002-06 to address the corresponding computational issues as follows:
  - (i) application of simple regression technique as adjustment process to clean the data of the effect of non-recurring transactions and outlier observations;
  - (ii) use of contribution to growth to rationalize the use of year-over-year growth rates and unit share with respect to the overall historical performance;
  - (iii) exploration of the clustering technique to facilitate allocation on a lesser number of units and to improve the heterogeneity of the actual collection across revenue regions;
  - (iv) enumeration of possible measures to implement goal allocation for individuals along with the pending issues.
  - (v) adoption of post-allocation diagnostics on simulated goals for CY 2006 over the collection data along with the comparison of the actual goals per RMOs to assess performance and validate applicability of the alternative approach;
  - (vi) deseasonalization (and forecasting) of monthly data for total tax collection (net of special taxes, having a relatively large data set required for the procedure) for automatic adjustment of time series (if warranted);
  - (vii) documentation of the macroeconomic assumptions on goal allocation used by DOF which can also be used in the design of adjustment framework later if so desired specially in the case of allocation of goal to individuals is implemented.

### *Adjustment Band for Non-Recurring Transactions*

2. ***Non-recurring Transactions as Adjustment Factor.*** As indicated in the IRR of R.A. 9335, target setting shall likewise consider fluctuations in prior years' collections due to non-recurring transactions, which shall refer to, one-time transactions which are substantial in amount (i.e., the amount accounts for ten percent or more of a District's collection for a particular month, with District referring to revenue region per law's IRR, rather than the usual revenue district office located at the provinces, cities or municipalities).
3. ***Treatment of Non-Recurring Transactions.*** In the past, the bureau was not consistent on the treatment of non-recurring transactions as to (i) value to be allowed and (ii) required documentary evidences. During the years in which "non-recurring transactions" were allowed (CY 2002, 2003 and CY 2005) and for CY 2007 goal allocation, the Statistics Division validated the final amount applicable for each district based on supporting documents or using a designed threshold (depending on the year in question). Subsequently, the cumulative total from the claim allowed for all districts in a given region is the total amount for such region.

4. **Impact on Goal Allocation.** This approach, however, leads to (i) overburdening the Statistics Division in reconciling collection figures and (ii) slowing the initial process of goal allocation to regions. To address this concern, derivation of an “adjustment band” were explored using feasible procedures (with the very small data set that could be utilized, annual from CY 2002 to CY 2006, for a total of five observations).
5. **Other Components in BIR Computation.** Though there are other components being considered in the refinement of the historical collection - like tax remittances from national government agencies, collections from GOCCs and LGUs, and the transfer of taxpayers (due to their own operational requirement or due to the bureaus policy of pooling the large taxpayers in the LTS) – these should not be deducted from the natural tax base as currently being practiced. The first is mandated to be deducted from collection for purposes of attrition, hence, would be known only after the close of the taxation/calendar year and will be deducted accordingly for purposes of attrition/evaluation. The second should not be treated as basis for adjustment, as collection from such governmental entities would recur each year. Lastly, the transfer of taxpayer during the allocation year should not netted out from the data, as the growth pattern of the natural tax will reflect such and will be accordingly adjusted in the refinement using the designed “adjustment band.” Adjusting only the current year without doing the same to the rest of the time series will further distort the data, hence, better considered as. In the case of prospective transfer, as required for by the bureau into or out of the LTS, could be subsequently adjusted, after the allocation based on the formula is determined. In such manner, the allocation is still based on formula and refinements would be introduced after the rational formula-based approach was performed. In the case of mergers and closures, effect in the collection values will be subsequently and be similarly, reflected in the data.
5. **Steps in Deriving Adjustment Band Through Regression Technique.** Though data cleaning as to seasonal effects and outliers is easily implementable through standard deseasonalization techniques (like X-12-ARIMA and TRAMO-SEATS) with the respective software being available from US Bureau of Census and Eurostat for free, the limited annual data conforming with the BIR’s current administrative is a constraint in utilizing such ideal procedures. Hence, with caution, simple regression using time as sole determinant was utilized in the exercise of generating an adjustment band as outlined below.
  - (a) Generate the predicted values form the simple regression of total annual collection against time (year sequence) without intercept (as it has no relevance in this data set there being no zero value involved data range containing it).
  - (b) Assign an adjustment factor, the corresponding unstandardized error (model residual), for example, percent of the monthly average (10% to start with), etc., with the objective of having all regions being favorably adjusted specially the most recent years immediately preceding the subject allocation year.
  - (c) Construct the lower and upper boundaries from the regression line (predicted values) using the adjustment factor adopted and/or its derivative values (as a comparative approach of calibrating the band) for all the regions.
  - (d) Adjust all data points below and above values of the corresponding lower or upper boundary by adopting such value, else, if the actual collection value is within the range of the lower to upper band, adopt the value as is.

(e) Adopt the adjusted values as the refined collection figures to be utilized in deriving the appropriate an allocation coefficient.

6. **Application of Regression Analysis.** With the established application of regression techniques in solving various problems in different fields of discipline, simple regression procedure for the purpose of constructing adjustment bands would not require the rigorous diagnostic evaluation for structural modeling. Simple regression with respect to time is easily implemented using common statistical software.

*Deriving Contribution to Growth to Generate Allocation Coefficient*

7. **Participatory Split Allocation.** The existing allocation of the bureau, being participatory in approach and using only the past year's collection data as a reference period, is being implemented through a two-step allocation process: (i) allocation of the grown natural tax base and the (ii) allocation of the residual (epsilon) out of the identified revenue potential for selected revenue regions/district offices.
8. **Growing the Natural Tax Base.** As part of refining the data of non-recurring transactions, among others, the amount of revenue collection per region is reduced and becomes its "natural tax base." This collection from the natural tax base of the immediate past year serves as a basis for projecting the collection for the subject year of goal allocation. Such projection is referred to as "growing" the tax base with the aim of approximating the total value of the revenue goal for the year.
9. **Growth Rate Dilemma.** Due to the "presumed differences" in the growth of "natural tax base" across revenue regions, the previous practice (CY 2004 and CY 2005) of imposing a uniform regional growth rates (as determined by the head office or based on NEDA's GDRP), was changed into an "agreed growth rate" to address the grievance of the RDOs on the arbitrariness of the imposed growth rate.
10. **Desirable Growth Rate.** At best, the practice of following a regional office's assigned growth rate is deemed desirable, if the revenue region has a well-defined system in determining the actual potential of its tax base. Without such, the relative potential is actually reflected in the historical data. Historical collections should indeed be considering a number of years, else, the IRR should have indicated "immediate past year" only, similar with the current practice in the bureau.

11. **Data-Generated Growth Rate.** The question of what growth rate is relevant in growing the “natural tax base” and/or the components being considered as deduction initially, (to be added back) like TRA and collections from GOCCs/LGUs, could be answered by the historical growth rates. Likewise, the corresponding growth rates of the said components will be also reflected in the historical pattern of the data. Hence, using “historical collections” will reveal the natural behavior of the tax base without necessary intervention (on each of the component being assigned with separate growth rates), except in cases of prospective transfer, force majeure or externalities.
12. **Bias of Share versus Year-over-Year Growth Rate.** Based on the experience of the bureau, the use of either share or year-over-year growth rate separately, had been criticized, due to the seeming bias as to size factor and projection impact. This has led to the use of previous year’s collection only to grow the natural base and separate “growing” of the components.
13. **Contribution to Growth as Alternative Tool.** The concept of weighted growth rate was explored as an alternative approach to bridge the gap in the use of historical share and growth rate. The share in the collection will serve as the weight in the growth rate, to balance the effect of the two measures, and hence, referred to as ‘contribution to growth.’ The desirable property of this measure is that per unit contribution to growth is cumulative (equal) to the annual growth rate, and thus, allows for the direct generation of the corresponding allocation coefficient. This also formalizes the computation as an integrated procedure using a rational formula based on the historical collection for each revenue region and their corresponding weight to the overall collection of the bureau.
14. **Steps in Generating Allocation Coefficient Based on Contribution to Growth.** To implement the allocation using contribution to growth, the procedure is described as follows:
  - (a) Using the previous years’ collection (more is ideal, but due to BIR change in administrative revenue regions, data would be of the same unit assignment from CY 2002 only), net of special taxes (excise tax, tax from treasury-bills, stock transaction tax and travel tax, to be reported under the Office of the Commissioner being non-BIR function and corresponding goal imposed by the DOF), and “non-recurring transactions” (actual or using the band rule) - compute the share of each region over the total per year.
  - (b) Compute the year-over-year growth per region, including the total for the year (and derivatives such as total for a number of years, average collection, etc).
  - (c) Multiply the year-over-year growth per region with the corresponding reference year’s share in the total collection and consider the resulting figures as the contribution to growth.
  - (d) Sum up the contribution to growth per region, which must be equal to the year-over-year growth rate of the total for the respective year.
  - (e) Get the average of the computed contribution to growth (the number of years to be considered is a decision of the analyst as consistency of the values, stability of the growth pattern and presence of negative growth rates) to decide on a single measure as basis for generating the final allocation coefficients.

- (f) Divide each (average) contribution to growth per region with the total to enable the derivation of the final allocation coefficient which can be multiplied directly to the total goal for allocation (net of special taxes with imposed goal as part of the macroeconomic assumption of the DOF).

### Clustering Technique to Group Similarly-Situated Regions

15. **Effect of Clustering.** Based on the preliminary evaluation of the changing allocation framework of the bureau using of coefficient of variation in the percentage difference between collection and goal (as shown in Baseline Report), value for CY 2002 is the lowest (though far from the ideal of 20% or below given with the heterogeneous nature of collection data across regions). Review of the allocation methodology for that year (as indicated in RMO 11-2002) indicated that some heuristic clustering under three (3) groups based on GDRP was considered. Each group was assigned different growth rate ranging from 8-10%. Thus, clustering technique was explored in the simulations performed.
16. **Advantage of Clustering.** Cluster analysis is the name of multivariate techniques whose primary purpose is to group objects based on the characteristics they possess (revenue collection). The resulting clusters of objects (revenue regions in this case) should then exhibit high internal (within-cluster) homogeneity and high external (between-cluster heterogeneity). With the aim of an integrated approach in goal allocation using contribution to growth or other tool and not allocating by breakdown (natural base + epsilon), the clustering is aimed at helping in the implementing a more equitable and fair allocation methodology.
17. **Clustering in Brief.** Clustering technique, hierarchical clustering to be specific, is not statistical method per se, but more of a transformation or reduction technique, inasmuch as it is not based on some distributional assumption (unlike Two-Step or K-Means clustering). Its objective is assessing structure by grouping objects and not concerned with grouping variables. Though the ideal number of cluster and best combination of objects/members in each of the cluster are automatically determined by the procedure, some conceptual and operational considerations may be used to adjust the recommended results.
18. **Steps in Implementing a Cluster-Based Allocation.** To implement the clustering technique, the procedure is as follows:
  - (a) Perform cluster analysis using some criteria (five-year average collection per tax type – Tax from Income and Profit, VAT, Other Percentage Taxes and Other Taxes) and follow the results (or adjusted results) of clustering analysis in the allocation exercise from start until the end, i.e., group analysis to final allocation;
  - (b) Compute the consolidated revenue total for each cluster by adding the individual collection total of each member-region in the cluster, and making sure that the overall total for each year from the clusters is equal to the sum of the per region revenue collection;
  - (c) Perform all the procedures necessary to refine the collection on a per cluster basis;
  - (d) Compute the share per cluster for the years considered as well as the corresponding contribution to growth;
  - (e) Determine the allocation coefficient per cluster (whether in a single or two-step allocation procedure);
  - (f) Compute the corresponding goal per cluster (single or two-step allocation);

- (g) Distribute the cluster goal to its member-regions using the share of the specific regions to total of the parameter considered (contribution to growth, share, etc.).

Post-Allocation Diagnostic Tool

19. **Methodology's Performance Measure.** As new tool and/or procedure was introduced as an alternative methodology, use of an evaluation measure is necessary to determine the performance of the said methodology. Among the evaluation tools available, in the case of goal allocation exercise, a straight forward comparison could be implemented using the absolute deviation of the revenue collection against the goal allocated by the existing and alternative procedures being recommended. Another common close-of-fit measure is the root mean square error (RMSE), which is appropriate in comparing various models and/or methodology. In the case of the simulation exercises performed, inasmuch as the collection is adopted as the actual data being predicted, while the goal projected is considered as the model's projection, the said measure is to be considered as RMSE.
20. **Ex-post Facto Application to CY 2006.** Simulation of the goal allocation using the alternative tool/methodology to the CY 2006 could be performed and compared with the targets provided for in the RMO 6-2006 (tentative goals released first quarter of the year) and 26-2006 (final targets released by October 2006). This retroactive application of the alternative framework will facilitate comparison.
21. **Comparative Analysis Across Allocation Methodologies.** The comparison is carried out after the goal allocation under the methodology/tool being tested was performed. Aside from serving as an evaluation measure, the use of absolute deviation for the simulation results on CY 2006 goal provides cross-validation measure for the existing or adopted methodology in the interim to be relatively close or better to a formula-based alternative methodology. Aside from, item-by-item comparison total absolute deviation and pseudo-RMSE could also be used.
22. **Steps for Final Goal Allocation In CY 2007 Using Alternative Approach.** The following steps were the procedures in generating the final allocation for CY 2007 (with results attached both for region and district offices).
- (i) Generate the per region/district total, net of special taxes (excise tax, tax from treasury-bills, stock transactions tax, and travel tax).
  - (ii) Use the per region/district collection per year (CY2002 to 2006) in simple regression with time (year) and no constant included in the model.
  - (iii) Generate the predicted values from regression; consider it as natural growth of the collection.
  - (iv) Following the provision of at least 10% monthly collection on the matter of non-recurring transactions, divide the predicted with 12 (to represent the number of months in a year) and compute the 10% of the "monthly average."
  - (v) Construct the upper and lower boundaries of predicted values corresponding to Predicted Values $\pm$ 10% of the Monthly Average.

- (vi) Compare the actual versus the “adjustment band”: if the value of the actual collection for the particular year is less than the lower boundary, the adjusted value is the lower band; in case the actual value of collection is higher than the upper boundary, the adjusted figure is the upper boundary. In case the actual collection is between the lower and upper, then the adjusted value is the value itself. Use of a formula to facilitate comparison and generate the summary of results.
- (vii) Given with the adjusted annual figures compute the corresponding share per unit of allocation (region/district).
- (viii) Compute for the average share for different periods to be able to compare the consistency in annual share.
- (ix) Based on the adjusted annual figures, derived the year-over-year growth rates, i.e., percentage change of each year over the previous year immediately preceding (and multiply by 100%).
- (x) Multiply the generated growth rate with the share of the reference year (divide by 100 if multiplication of 100 was made previously). Make sure that the total contribution to growth is equal to the growth rate of the total years being compared.
- (xi) Derive the average contribution to growth and select which is relatively consistent with the pattern of the data.
- (xii) Generate the allocation coefficient by dividing the contribution to growth per allocation unit by the total contribution to growth.
- (xiii) Multiply the resulting allocation coefficient to the total goal for allocation, net of special taxes (with imposed goal from DOF).

As an extension to the district level, once the goal is allocated to the regions, follow step (i) to (vii), for the sub-level allocation, and proceed as follows.

- (xiv) Adopt the period used in the computation of contribution to growth at regional level as the relevant period to be used in the sub-region allocation, i.e., if average of CY2002-2006 be consistent with it.
- (xv) Derive the share of each district in the region with the total share of the region, do this for all and making sure that the total for the region sums up to 1; the resulting coefficient is the applicable “allocation coefficient for the district.”
- (xvi) Multiple the allocation coefficient of the district with its applicable regional total goal; do this for all to generate the respective monetary goals.

#### Goal Assignment to Individuals

23. **Constraints of Implementing Goal Allocation to Individuals.** With due consideration on the imperfections of the law/IRR and the level of readiness of BIR to implement goal allocation down to individual level, the most feasible for now is the shared goal among those identified attributable positions. That in case, the district (region and district office) fell below 7.5% of its target all attributable positions will be considered for attrition. However, as

mitigating factor, based on the evaluation results on their PMS Scorecard and PES rating, the Commissioner will make the final recommendation to the Revenue Performance Evaluation Board (RPEB).

24. **Recommended Implementation Scheme.** The above system is recommended for implementation until the time that the bureau is ready to implement a single performance evaluation considering a right mix of both monetary and non-monetary goals depending on their position (responsibility in influencing collection). Using the PMS Balance Score Card which is designed for rewards only, an ideal combination of monetary goals along with KPIS (also reflected in PES), and to integrate performance measure serving both for rewards and attrition could be designed.
25. **Provisions of the Draft RMO.** Design of the goal allocation to individuals is however constrained by the selective positions identified as attributable for the initial application of the Attrition Law. Since, the attrition provision in the Draft RMO identify only those with direct influence in the collection, the unit allocation down to individuals, at best, should be designed by each concerned unit. The draft RMO to date is unsigned and hence, still subject to change, but MANCOM is keen on implementing the provisions of the draft RMO through a shared goal concept and via a mix of monetary and KPIs (depending upon the level of position or influence to the collection) is being recommended by EMERGE. As of completion of this report, the feedback from the point persons assigned to look into the recommendation of the employees and officials gathered in the focus group discussions and plenary assembly, is that - (i) the concept of universal application of attrition is the best option but still how to allocate the goals to individuals require more time and hence, (ii) its implementation has to be postponed until the time the bureau is ready for such system.

Goal Adjustment Based on Macroeconomic Assumptions

26. **Adjustment Provision for Goal Assessment.** With the clamor of the RDOs and the rank-and-file employees for an adjustment mechanism on imposed goal, re-assessment of the assigned goal should be conducted prior to performance evaluation. In both directions, if the macroeconomic assumptions used to project the goal of the bureau did not happen or more than expectations, adjustments should be made accordingly. Such adjustment mechanism would only be feasible if the pending policy directions are resolved (i.e., selective vs. total application of the attrition provision, shared goal vs. individual target, collection measure vs. combination with KPIs, etc.).
27. **Macroeconomic Assumptions of CY 2007 Goal.** Based on the Working Papers of the DOF (as of 14 February 2007, the following are the basis of the CY 2007 imposed target (revised as of 14 February 2007) :

No.	Indicator	Value
#1	Gross Domestic Product (GDP), Nominal (Php M)	6,609,722
#2	Gross Domestic Product (GDP), Nominal-growth rate (%)	10.2
#3	Gross Domestic Product (GDP), Real (Php M)	1,353,643
#4	Gross Domestic Product (GDP), Real-growth rate (%)	5.4
#5	Gross National Product (GNP), Nominal (Php)	7,498,243
#6	Gross National Product (GNP), Nominal-growth rate (%)	14.3
#7	Gross National Product (GNP), Real (Php)	1,490,397
#8	Gross National Product (GNP), Real-growth rate (%)	6.2

No.	Indicator	Value
#9	Inflation Rate (%)	3.3
#10	Exchange Rate, Php/US\$1 (Php)	48.0
#11	Depreciation Rate (%)	-6.9
#12	T-Bill Rate, 91-day (%)	4.0
#13	T-Bill Rate, Weighted Average (%)	5.1
#14	Price of Oil, US\$/barrel (US\$)	61.0
#15	Imports, FOB, (US\$ M)	60,256
#16	Import Growth Rate, US\$ Terms (%)	12.0
#17	Peso Terms (%)	4.8
#18	Exports, FOB, (US\$ M)	51,843
#19	Exports Growth Rate, US\$ Terms (%)	11.0
#20	Peso Terms (%)	3.8
#21	Tariff Rate, Non-Oil Imports, Existing System (%)	5.4
#22	Tariff Rate, Non-Oil Imports, New System (%)	5.4

28. **Elasticities Used in Projecting Collections for CY 2007.** Shown in the following table are the relevant elasticities assigned for each of the sub-type of tax based on the same source document from the DOF.

Tax Type	Derived Elasticities
I. Taxes on Net Income and Profits	
A. Company, Corporate, Enterprise	1.80
B. Individual	1.40
C. Others: 1. Commercial Paper	
2. Average Deposits (D/GDP and C/D)	1.22
3. Tax on Government Securities	2.0 and 0.05
4. Capital Gains	Non indicated
II. Excise Taxes	
A. Alcoholic Products (T/GDP)	1.22
B. Tobacco Products (PGDPc and C/Pc)	0.80 and 0.81
C. Fuels and Oils (Constant and Current Terms)	1.0 and -0.60
D. Mining	1.5
E. Automobile	1.2
Tax Type	Derived Elasticities
F. Film ...	1.0
G. Tobacco Inspection Fee	1.0
III. Sales Taxes, VAT and Licenses	
A. Selective Tax on Services	
1. Total Percentage Taxes	
a. Other Percentage (incl'd, OCT/excl'dg STT)	1.18
b. Stock Transactions	4.18
2. Banks/Financial Institutions	3.0
3. Insurance Premiums	1.0
4. Amusement	1.3
B. Value-added Tax/Sales Tax (C/G and C/G-X)	3.31 and 2.88
C. Tax on use of goods on permissions to perform activity (franchise)	2.0

Tax Type	Derived Elasticities
IV. Other Domestic Taxes	
A. Documentary Stamp Tax	1.4
B. Taxes on Property	1.5
C. Travel Tax	1.42
D. Miscellaneous	1.0

**B. STEPS IN THE SELECTED ALTERNATIVE APPROACH  
TO REVENUE GOAL ALLOCATION**

- 1) Delineate the taxes under BIR Operations against that of non-BIR operations (Taxes from treasury bills, documentary stamp tax on treasury bills and travel taxes, such that the goal for allocation based on BIR operations is net of the non-non-BIR operations.
- 2) Compute for the annual total taxes from BIR operations per region for each of the collection years which will serve as basis for the formula-based computation (five years in this case to cover CY 2002-CY 2006).
- 3) Generate the yearly predicted values for each region using simple regression over time with no constant in the model (regression through the origin) to design an adjustment band for non-recurring transactions and other random effects.
- 4) Use the predicted values for each year across regions to generate an adjustment band of  $\pm 10\%$  of the monthly average in both lower and upper bounds.
- 5) With the designated adjustment band of predicted  $\pm 10\%$  of the monthly average prediction, compare the actual value with the lower bound, predicted value and upper bound in thrichotomy function such that:

Condition	Adjustment
If actual value $\leq$ lower bound	Adopt the lower bound as new value
If lower bound < actual value < upper bound	Adopt the actual value as is
If actual value $\geq$ upper bound	Adopt the upper bound as new value

- 6) Given the adjusted annual collection total for each region, compute the annual share (in percent) of each region over the annual total such that the total of the collection per region under each year will be exactly 100%.
- 7) Compute the corresponding change in the value year-over-year for each of the region.
- 8) Derive the contribution to growth for each comparative year-over-year period by multiplying the particular year-over-year growth (and dividing by 100) with the share for the base year (of the comparative period).
- 9) Compute for the average of the contribution to growth for the four (4) comparative periods.
- 10) Generate the allocation coefficient by dividing the average contribution to growth per region by the total average.
- 11) Given with the goal from BIR-operations for the prospective year, multiply the corresponding allocation coefficient to derive the regional allocation for the year.
- 12) For the district-level, follow steps 1 to 7, and compute the annual average share for the year such that the corresponding total will be 100%.
- 13) Use the average share for each district under a particular region to compute for the allocation coefficient by dividing the share of the district to the total of the region.
- 14) Multiply the corresponding average share of the district in the region (allocation coefficient) to the total goal allocated in the previous steps for the region.

Using Operational Symbols:

Let  $X_i$  be the separate total collection for calendar year (net of special taxes, i.e., excise tax, tax from treasury bills, stock transactions' tax and travel tax) for regions 1, ..., 20.

- (1) Generate a simple linear regression without constant in the equation with respect to time (1, ..., 6) to represent calendar years 2002 to 2006, such that  $Y = \beta X$  for each region 1, ..., 20.
- (2) Given the resulting equation, derive the predicted values  $\bar{Y}_i$  for CY 2002 to 2006 for the corresponding regions  $j = 1, \dots, 20$ .
- (3) Compute the monthly average  $\bar{Y}_i$  for each of the respective regions 1, ..., 20 by dividing  $\bar{Y}_i$  for CY 2002 to 2006 with 12 (the number of months in a year).
- (4) Derive the adjustment factor  $C_i$  by multiplying the average  $\bar{Y}_i$ 's for CY 2002 to 2006 with 10% to reflect the minimum provision on non-recurring transactions cited in the IRR.
- (5) Define the lower  $LB_i = \bar{Y}_i - 0.10 \times C_i$  and upper bound  $UB_i = \bar{Y}_i + 0.10 \times C_i$  per region.
- (6) Compare the actual total collection  $X_i$  against the defined adjustment bounds  $LB_i$  and  $UB_i$  to derive  $A_i$ , the adjusted collection figure accounting for the regular growth pattern of the natural base, such that:

$$A_i = \begin{cases} UB_i, & \text{if } X_i \geq UB_i \\ X_i, & \text{if } LB_i < X_i < UB_i \\ LB_i, & \text{if } X_i \leq LB_i \end{cases}$$

- (7) Given  $A_i$  as the adjusted tax collection figure for a particular year  $i=1, \dots, 5$ , and of a specific region  $j=1, \dots, 20$ , then the total sum for the year  $j$  is given by  $\sum_{i=1}^6 A_i$ .
- (8) Compute the corresponding share in percent for each year  $i$ ,  $S_i = \left( A_i / \sum_{i=1}^6 A_i \right) \times 100$  such that its total  $\sum S_i = 100$  for each region  $j=1, \dots, 20$ .
- (9) Generate the year-over-year growth of the  $A_i$ 's,  $G_i = (A_i - A_{i-1}) \times 100$  for each region  $j=1, \dots, 20$ , and hence, the total for year-over-year growth for each year-over-year comparative period  $k=1, \dots, 4$ , is  $G_T = \left( \sum A_{i+1} - \sum A_i \right) \times 100$ .
- (10) Derive the contribution to growth  $Z_i = \left( G_i / 100 \right) \times S_i$  for each region  $j=1, \dots, 20$  and the total contribution to growth  $Z_T = \sum_{j=1}^{20} Z_j$  for each comparative period  $k=1, \dots, 4$ .
- (11) Compute the average of the contribution to growth for the region,  $\bar{Z}_j = \left[ \sum_{k=1}^4 \left( G_i / 100 \right) \times S_i \right] / 4$  and the corresponding total  $\bar{Z}_T = \sum_{j=1}^{20} \bar{Z}_j$ , such that  $\bar{Z}_T = G_T$  for each  $k=1, \dots, 4$ .

(12) Derive the allocation coefficient  $W_j = \frac{\bar{Z}_j}{\bar{Z}_\tau}$  for each of the regions  $j=1, \dots, 20$

such that  $\sum_{j=1}^{20} W_j = 1$  .

(13) Given with the sub-total goal (net of special taxes with its corresponding goal from DOF) for allocation  $T$  Compute the respective goal allocation  $R_j = W_j \times T$  ,

such that  $\sum_{j=1}^{20} R_j = T$  .

In sum, the allocation for the regional level is as follows:

$$R_j = \left\{ \frac{\left[ \left[ \frac{\sum_{k=1}^4 (A_{i+1} - A_i)}{A_i} \right] \times 100 \right] \times \left[ \frac{\sum_{k=1}^4 \left( \frac{A_{ij}}{\sum_{j=1}^{20} \sum_{i=1}^4 A_{ij}} \right)}{k} \right]}{G_\tau} \right\} \times T$$

such that:

$$Z_\tau = \sum_{j=1}^{20} Z_j, \bar{Z}_\tau = G_\tau \text{ for each } k=1, \dots, 4, \sum_{j=1}^{20} W_j = 1 \text{ and } \sum_{j=1}^{20} R_j = T .$$

In the same manner, the formula in deriving the goal allocation for the district follows, accordingly. Following the concept of regression technique to adjust tax collection per district as illustrated in steps (1) to (6) before generating total share, the same adjustment procedure was adopted on the district allocation.

Given the total goal allocated to the revenue region  $R_j$ , with revenue district offices  $h = 1, \dots, n$ , per district revenue allocation is-

$$D_{n,j} = \left[ \frac{\sum_{i=1}^5 \frac{A_i}{\sum_{h=1}^n \sum_{i=1}^6 A_{ih}}}{n} \right] / \bar{S}_h \times R_j, \text{ where } \bar{S}_h \text{ is}$$

the share of the district  $h = 1, \dots, 119$ , with respect of the total collection of the bureau for the past five years.

## **Annex “D.2”**

### **STATISTICAL/ COMPUTATIONAL NOTES 2: DATA AND SIMULATION RESULTS**

## A. FINAL DATA ON HISTORICAL COLLECTIONS, CY 2002-06

**Table 1: Collection Per Revenue Region (Php M)**

REVENUE REGION	COLLECTION <sup>1/</sup>				
	CY 2002	CY 2003	CY 2004	CY 2005	CY 2006
1	2,792.7	2,804.5	3,222.3	4,409.6	6,095.0
2	1,958.5	1,736.0	2,012.5	3,564.5	2,559.8
3	1,361.7	1,424.4	1,458.7	1,599.1	1,780.5
4	5,443.1	5,711.2	6,478.0	7,584.6	9,177.8
5	5,845.8	6,036.6	6,784.8	8,275.7	9,610.9
6	19,440.7	25,334.6	18,798.9	31,364.7	35,006.1
7	35,262.3	36,986.1	42,198.8	47,975.2	64,373.3
8	38,094.2	41,449.5	47,513.9	55,464.4	81,778.7
9	15,281.0	17,567.3	20,667.5	24,817.9	28,032.2
10	2,058.5	2,037.8	2,184.8	2,501.8	2,903.4
11	2,683.9	2,761.8	3,206.6	3,686.2	4,405.8
12	2,073.6	2,194.5	2,660.6	3,097.4	3,318.7
13	4,826.6	5,123.7	5,893.6	7,030.7	8,743.5
14	1,917.4	2,350.5	2,928.0	2,940.9	3,224.9
15	1,310.9	1,421.9	1,535.1	1,597.1	1,914.4
16	3,174.8	2,953.3	3,221.1	3,740.4	4,173.4
17	1,006.8	1,102.4	1,219.1	1,381.3	1,586.8
18	1,775.1	1,744.1	2,025.2	2,220.6	2,620.0
19	3,547.9	3,778.5	4,355.0	4,952.5	6,109.3
LTS	<u>159,914.7</u>	<u>175,941.8</u>	<u>198,435.6</u>	<u>224,909.8</u>	<u>282,387.7</u>
<b>Sub-total</b>	<b><u>309,770.3</u></b>	<b><u>340,460.3</u></b>	<b><u>376,800.1</u></b>	<b><u>443,114.1</u></b>	<b><u>559,802.2</u></b>
Add: Special Taxes					
Excise Tax	56,974.7	56,856.7	59,575.3	61,788.5	58,324.5
Tax from T-Bills	25,303.4	27,884.5	32,290.9	36,229.3	32,390.1
Stock Transactions Tax	901.3	919.5	645.6	2,765.4	2,319.6
Travel Tax	<u>355.3</u>	<u>394.5</u>	<u>275.4</u>	<u>409.5</u>	<u>445.6</u>
<b>Total</b>	<b><u>393,305.0</u></b>	<b><u>426,515.5</u></b>	<b><u>469,587.4</u></b>	<b><u>544,306.7</u></b>	<b><u>653,281.9</u></b>

<sup>1/</sup> Per 12.09 Reports of RDO to RAD, run as of 13 March 2007

**Table 2: Collection Per Revenue District Office (Php M)**

REGION/RDO		CY 2002	CY 2003	CY 2004	CY 2005	CY 2006
1)	1	346.9	359.9	436.7	478.4	534.7
	2	398.8	400.8	473.7	520.6	645.7
	3	644.2	585.7	636.0	724.6	795.6
	4	528.3	594.4	669.8	893.8	1,000.4
	5	405.5	416.1	416.2	1,183.7	2,484.5
2)	6	469.1	447.7	589.9	608.5	634.0
	7	71.6	68.4	84.0	91.6	97.9
	8	1,301.1	1,097.8	1,342.8	2,877.2	1,792.6
	9	355.0	332.7	342.4	303.4	360.8
	10	55.1	64.2	60.8	82.4	88.1
	11	117.5	107.1	118.5	136.4	143.8
	12	58.3	65.8	64.1	73.5	76.7
3)	13	625.3	672.9	648.8	635.9	704.1
	14	172.3	191.5	195.9	237.3	265.6
	15	516.3	509.7	561.2	650.6	737.3
	16	47.7	50.2	52.8	75.4	73.6
4)	17	821.7	950.9	980.5	1,196.9	1,430.3
	18	340.0	348.7	420.0	482.2	630.3
	19	667.3	637.6	749.9	951.7	1,123.5
	20	632.5	646.4	666.8	701.6	757.7
	21	2,226.9	2,378.5	2,796.0	3,189.6	4,044.1
	22	74.4	71.9	75.1	94.0	101.8
	23	680.2	677.2	789.6	968.5	1,090.1
5)	24	1,238.8	1,178.3	1,352.6	1,750.2	1,998.7
	25	2,033.5	2,023.6	2,230.9	2,652.3	2,922.3
	26	1,118.6	1,083.7	1,279.1	1,501.8	1,684.8
	27	1,454.9	1,751.0	1,922.3	2,371.3	3,005.1
6)	29	1,034.7	1,105.9	1,408.5	1,706.0	1,703.3
	30	1,536.0	1,110.9	1,096.5	1,728.7	1,564.3
	31	768.4	840.8	897.7	1,021.7	1,252.5
	32	1,670.9	1,709.9	1,750.9	2,104.5	2,444.0
	33	12,360.8	18,342.6	11,340.1	21,981.9	24,710.7
	34	1,549.6	1,664.5	1,635.4	2,026.6	2,426.8
	35	81.1	75.2	89.7	97.3	111.5
	36	328.4	363.6	444.1	542.8	620.4
	37	110.8	121.3	136.0	155.3	172.7
	7)	28	977.3	986.8	1,210.0	1,444.8
38		3,676.0	3,933.0	4,191.4	4,591.4	5,579.0
39		9,287.4	7,822.3	9,295.5	10,148.7	18,335.8
40		4,441.3	5,549.0	6,397.2	7,438.8	9,272.9

**Table 2: Collection Per Revenue District Office (Php M) ... continued**

REGION/RDO	CY 2002	CY 2003	CY 2004	CY 2005	CY 2006	
	41	4,061.8	4,632.6	5,200.7	5,786.7	7,522.5
	42	1,332.1	1,451.7	1,627.1	1,787.5	2,231.6
	43	9,073.6	9,922.0	11,592.5	13,382.5	15,387.5
	45	1,144.0	1,382.5	1,420.2	1,820.5	2,336.9
	46	1,268.8	1,306.3	1,264.1	1,574.2	1,999.8
8)	44	1,999.9	2,552.6	2,940.4	3,729.5	7,639.1
	47	8,001.9	8,469.1	9,256.7	11,471.4	13,999.1
	48	3,090.3	3,668.0	3,482.9	3,876.7	7,346.0
	49	4,218.1	4,226.9	5,042.8	5,544.6	7,029.0
	50	9,248.2	9,624.9	11,994.7	13,389.5	18,810.1
	51	3,115.8	3,030.6	3,396.6	4,077.4	5,963.6
	52	3,114.1	3,284.8	4,051.3	5,005.4	5,725.6
	53	5,305.9	6,592.6	7,348.5	8,369.9	15,266.2
9)	54	4,278.0	4,547.1	5,542.1	6,753.5	7,452.1
	55	1,009.1	801.7	586.7	934.9	914.9
	56	2,230.7	2,787.9	3,513.4	4,524.6	4,728.9
	57	3,457.4	3,369.1	4,845.5	5,552.5	6,919.0
	58	1,372.9	1,261.0	1,217.9	1,368.7	1,583.1
	59	1,040.3	1,176.6	1,354.2	1,757.0	1,932.7
	60	1,558.1	3,259.1	3,189.5	3,428.3	3,929.0
	61	98.9	108.7	124.7	133.3	157.8
	62	46.3	52.3	62.8	80.3	85.8
	63	189.3	203.7	230.8	284.8	329.1
10)	64	165.6	174.6	205.5	274.9	348.7
	65	449.9	451.3	531.8	688.8	745.7
	66	142.1	131.9	148.5	177.9	205.6
	67	1,009.4	972.1	912.0	862.1	1,022.5
	68	124.3	135.1	166.5	203.6	235.2
	69	72.8	69.4	80.1	104.7	125.5
	70	94.4	103.3	140.4	189.7	220.1
11)	71	172.3	171.9	229.6	371.7	395.4
	72	201.6	213.1	246.2	320.5	344.9
	73	95.8	112.7	150.9	223.6	672.0
	74	1,969.0	2,059.9	2,315.8	2,480.3	2,678.4
	75	245.3	204.2	264.1	290.2	315.0
12)	76	345.4	339.1	553.8	642.3	572.9
	77	1,022.7	1,119.6	1,247.1	1,422.2	1,574.2
	78	202.1	199.3	211.2	274.9	341.0
	79	503.5	536.6	648.6	758.0	830.6

**Table 2: Collection Per Revenue District Office (Php M) ... continued**

REGION/RDO		CY 2002	CY 2003	CY 2004	CY 2005	CY 2006
13)	80	1,317.6	1,451.0	1,724.4	2,217.4	2,762.8
	81	1,936.3	2,090.2	2,202.6	2,693.1	3,281.8
	82	554.7	618.1	753.8	848.6	1,076.3
	83	637.2	588.7	726.2	696.0	935.5
	84	380.8	375.6	486.6	575.5	687.1
14)	85	124.2	122.3	145.2	156.0	169.4
	86	113.1	103.0	126.6	153.3	154.7
	87	167.6	152.9	174.7	248.0	251.6
	88	851.5	819.2	880.7	810.9	887.8
	89	538.9	1,030.6	1,454.5	1,376.1	1,556.1
	90	122.0	122.5	146.3	196.6	205.1
15)	91	186.6	206.5	239.8	335.8	410.8
	92	209.9	224.3	242.7	297.9	349.9
	93	827.7	890.6	941.3	834.5	1,024.9
	94	42.4	49.5	56.0	69.3	59.7
	95	27.6	30.6	30.7	31.6	38.8
	96	16.7	20.5	24.6	28.0	30.4
16)	97	100.0	102.2	114.3	139.9	156.6
	98	1,764.2	1,773.1	1,938.5	2,230.9	2,432.6
	99	573.8	353.8	359.0	428.6	482.0
	100	191.8	198.6	229.4	269.0	318.6
	101	447.7	409.9	483.2	540.9	627.3
	102	97.4	115.8	96.7	131.0	156.3
17)	103	401.4	446.8	498.2	593.9	628.2
	104	201.2	216.1	251.0	251.0	268.9
	105	212.8	226.4	226.0	277.2	400.3
	106	191.5	213.0	243.9	259.1	289.4
18)	107	605.4	555.6	641.9	677.6	724.2
	108	291.1	283.3	282.4	274.0	314.2
	109	110.8	109.4	134.4	138.7	173.2
	110	447.8	449.7	583.2	662.6	823.4
	111	320.0	346.2	383.3	467.7	584.9
19)	112	595.4	672.7	816.2	914.5	1,134.6
	113	2,641.7	2,779.0	3,119.2	3,580.8	4,453.8
	114	112.9	103.8	141.9	155.4	177.0
	115	197.9	223.0	277.6	301.8	343.8
LTS	LTS	119,589.4	129,963.2	147,959.5	167,250.3	202,302.5
	Excise	26,046.3	30,466.6	33,937.3	38,797.5	50,614.1
	LTDO-Makati	9,351.9	10,385.3	10,759.3	11,794.3	20,462.1
	LTDO-Cebu	4,927.1	5,126.7	5,779.6	7,067.6	9,008.9
	Sub-total	<u>309,770.3</u>	<u>340,460.3</u>	<u>376,800.1</u>	<u>443,114.1</u>	<u>559,802.2</u>
	Add: Special Taxes					
	Excise Tax	56,974.7	56,856.7	59,575.3	61,788.5	58,324.5
	T-Bills	25,303.4	27,884.5	32,290.9	36,229.3	32,390.1
	Stock Transactions	901.3	919.5	645.6	2,765.4	2,319.6
	Travel Tax	<u>355.3</u>	<u>394.5</u>	<u>275.4</u>	<u>409.5</u>	<u>445.6</u>
	Total	<b>393,305.0</b>	<b>426,515.5</b>	<b>469,587.4</b>	<b>544,306.7</b>	<b>653,281.9</b>

## B. RESULTS OF SIMULATIONS

**Simulations #1 - #4: Found in Annex “B”**

**Simulation #5: Found in Annex “C”**

**Simulation #6: Retroactive Application to CY 2006**

- **Using CY 2002-05 Data,**
- **Tax Type Per Region,**
- **Clustering by Region,**
- **Band Adjustment is Predicted  $\pm$  Standard Error,**
- **Contribution to Growth for CY 2004-05 Used for Cluster Allocation,**  
**and**
- **CY2004-05 Average Share for Inter-Cluster Allocation to Region**

Cluster Number	Revenue Region	Major Tax Type				Total Revenue
		Income Taxes	Value-added Taxes	Percentage Taxes	Other Taxes	
4	1	3,976,880,011	1,025,541,367	213,903,611	361,376,957	5,577,701,946
1	2	3,940,261,699	402,776,754	69,090,481	110,418,855	4,522,547,790
1	3	1,333,770,757	460,239,409	88,252,815	138,119,149	2,020,382,130
5	4	6,941,929,523	1,591,672,104	477,481,718	571,550,147	9,582,633,492
4	5	6,106,671,969	3,182,056,384	386,563,791	818,640,811	10,493,932,955
6	6	20,669,886,696	5,967,700,236	2,781,401,997	9,906,705,313	39,325,694,243
7	7	41,011,495,839	13,413,086,915	2,679,447,987	4,347,293,054	61,451,323,796
7	8	51,033,942,378	13,525,535,155	3,363,782,543	3,728,417,147	71,651,677,223
6	9	25,601,453,527	3,809,366,973	474,076,592	2,224,276,265	32,109,173,357
1	10	2,145,620,629	731,847,926	89,777,138	147,918,626	3,115,164,319
2	11	2,869,996,746	1,202,201,920	232,488,932	344,734,641	4,649,422,240
2	12	2,230,326,144	1,221,748,061	162,527,625	308,248,852	3,922,850,682
5	13	5,924,718,972	1,580,020,098	675,436,156	737,755,445	8,917,930,672
1	14	2,827,714,058	641,513,596	164,157,567	193,026,987	3,826,412,208
3	15	1,374,388,897	452,037,064	69,643,143	128,965,241	2,025,034,346
2	16	3,363,580,920	865,624,474	219,130,412	289,114,826	4,737,450,634
3	17	997,710,950	521,875,421	80,943,221	134,629,687	1,735,159,280
1	18	2,106,863,223	494,995,342	74,979,537	119,614,433	2,796,452,535
4	19	4,340,423,152	1,189,639,947	366,180,651	398,788,396	6,295,032,146
8	20	185,234,878,498	59,483,640,801	26,793,404,570	19,099,100,140	<u>290,611,024,009</u>
Sub-total						<u>569,367,000,000</u>
Excise Tax						59,789,000,000
Tax from Treasury Bills						44,151,000,000
Taxes from Stock Transactions						1,701,000,000
Travel Tax						<u>345,000,000</u>
Total Goal						<u>675,353,000,000</u>
Performance Measure(s)						
Total Absolute Deviation						<u>36,617,313,637</u>
Root Mean Square Error (From Collection)						<u>3,319,633,097</u>

\* Data Rundate of 26 Jan 2007



**Simulation #8: Retroactive Application to CY 2006**

- Using CY 2002-05 Data,
- Clustered Regional Data as Input to Regression,
- Band Adjustment is Predicted Per Cluster  $\pm 10\%$  Monthly Average,
- Contribution to Growth is Used as Allocation Criterion in
- Cluster and Regional Level

Cluster Assignment	Adjusted Collection By Regression Prediction + %10MoAverage				Contribution to Growth			Goal Amount Using Contribution to Growth		
	CY 2002	CY 2003	CY 2004	CY 2005	CY 2004-05	Ave CY2002-05	Ave CY2003-05	CY 2004-05	Ave CY2002-05	Ave CY2003-05
C1: LTS	188,089.4	188,188.6	191,442.2	191,543.0	0.0273	0.3158	0.4600	62,916.0	294,744.1	294,543.2
C2: 7&8	85,459.8	85,502.5	86,982.9	87,026.3	0.0117	0.1432	0.2090	27,082.8	133,696.0	133,806.6
C3: 6&9	42,928.7	42,950.2	42,971.6	43,715.6	0.2011	0.0710	0.1035	464,236.6	66,228.7	66,257.4
C4: 1,4,5,13,19	25,988.4	26,001.3	26,451.5	26,464.7	0.0036	0.0436	0.0636	8,235.9	40,657.0	40,690.7
C5: 11,12,15,16,17	11,403.4	11,409.1	11,606.6	11,612.4	0.0016	0.0191	0.0279	3,613.8	17,839.8	17,854.6
C6: 2,3,10,14,18	<u>10,356.0</u>	<u>10,361.1</u>	<u>10,540.5</u>	<u>10,545.8</u>	<u>0.0014</u>	<u>0.0174</u>	<u>0.0253</u>	<u>3,281.9</u>	<u>16,201.2</u>	<u>16,214.6</u>
<b>Total</b>	<b>364,225.7</b>	<b>364,412.8</b>	<b>369,995.4</b>	<b>370,907.9</b>	<b>0.2466</b>	<b>0.6100</b>	<b>0.8893</b>	<b>569,367.0</b>	<b>569,367.0</b>	<b>569,367.0</b>

Cluster Assignment	Revenue Region	Allocation Based on Cluster's Contribution to Growth			Absolute Deviation of Collection From Assigned Goal		
		Ave CY2002-05	Ave CY2003-05	CY 2004-05	Ave CY2002-05	Ave CY2003-05	CY 2004-05
	1	29,761.7	29,786.3	6,028.8	23,666.8	23,691.4	66.1
	2	7,279.4	7,285.4	1,474.6	4,719.5	4,725.5	1,085.3
	3	2,850.1	2,852.5	577.3	1,069.6	1,072.0	1,203.2
	4	1,662.4	1,663.8	336.8	7,515.4	7,514.0	8,841.0
	5	6,628.2	6,633.7	1,342.7	2,982.7	2,977.2	8,268.2
	6	64,665.1	64,693.1	453,276.4	29,659.0	29,687.0	418,270.3
	7	62,952.4	63,004.5	12,752.3	1,420.9	1,368.8	51,621.0
	8	70,743.6	70,802.1	14,330.5	11,035.1	10,976.6	67,448.2
	9	1,563.6	1,564.3	10,960.2	26,468.6	26,467.9	17,072.0
	10	5,659.8	5,664.5	1,146.5	2,756.4	2,761.1	1,756.9
	11	459.0	459.3	93.0	3,946.8	3,946.4	4,312.8
	12	373.0	373.3	75.5	2,945.7	2,945.4	3,243.1
	13	1,508.0	1,509.3	305.5	7,235.5	7,234.2	8,438.0
	14	233.2	233.4	47.2	2,991.6	2,991.4	3,177.6
	15	218.2	218.3	44.2	1,696.3	1,696.1	1,870.2
	16	16,614.6	16,628.3	3,365.6	12,441.2	12,454.9	807.8
	17	175.2	175.3	35.5	1,411.6	1,411.5	1,551.3
	18	178.6	178.8	36.2	2,441.4	2,441.3	2,583.9
	19	1,096.6	1,097.5	222.1	5,012.7	5,011.8	5,887.2
LTS	20	<u>294,744.1</u>	<u>294,543.2</u>	<u>62,916.0</u>	<u>12,356.4</u>	<u>12,155.5</u>	<u>219,471.6</u>
	Total	<b>569,367.0</b>	<b>569,367.0</b>	<b>569,367.0</b>	<b>163,773.2</b>	<b>163,530.0</b>	<b>826,975.8</b>
Add: Special Taxes							
	Excise Tax		44,151.0				
	Tax from Treasury-Bills		5,979.0				
	Stock Transactions Tax		1,701.0				
	Travel Tax		345.0				
	Overall Goal		<b>675,353.0</b>				
					<b>Root Mean Square Error</b>		
					<u>11,780.5</u>	<u>11,784.3</u>	<u>98,077.8</u>

**Simulation #9: Retroactive Application to CY 2006**

- Using CY 2002-05 Data,
- Clustering Applied After Regression
- Band Adjustment is Predicted  $\pm 10\%$  Monthly Average,
- Contribution to Growth is Used as Allocation Criterion in Cluster; and Regional Level

Regional Cluster	Contribution to Growth			Allocation Coefficient			Goal Amount		
	CY 2004-05	Ave CY2002-05	Ave CY2003-05	CY 2004-05	Ave CY2002-05	Ave CY2003-05	CY 2004-05	Ave CY2002-05	Ave CY2003-05
C1: LTS	0.0272	0.0032	0.00460	0.1279	0.5173	0.5505	72,828.6	294,506.2	313,433.8
C2: 7&8	0.0117	0.0014	0.00209	0.0551	0.2346	0.2501	31,349.7	133,589.8	142,389.5
C3: 6&9	0.1128	0.0007	0.00050	0.5296	0.1175	0.0603	301,554.5	66,905.1	34,312.4
C4: 1,4,5,13,19	0.0210	0.0004	0.00063	0.0984	0.0712	0.0758	56,048.5	40,522.3	43,180.5
C5: 11,12,15,16,17	0.0163	0.0002	0.00028	0.0766	0.0312	0.0332	43,586.6	17,749.3	18,909.4
C6: 2,3,10,14,18	<u>0.0239</u>	<u>0.0002</u>	<u>0.00025</u>	<u>0.1124</u>	<u>0.0283</u>	<u>0.0301</u>	<u>63,999.1</u>	<u>16,094.4</u>	<u>17,141.4</u>
<b>Total</b>	<b>0.2130</b>	<b>0.0061</b>	<b>0.00836</b>	<b>1.0</b>	<b>1.0</b>	<b>1.0</b>	<b>569,367.0</b>	<b>569,367.0</b>	<b>569,367.0</b>

Cluster	Region	Regional Allocation by Contribution to Growth			Comparison by Absolute Deviation		
		Ave CY2002-05	Ave CY2003-05	CY 2004-05	Ave CY2002-05	Ave CY2003-05	CY 2004-05
4	1	29,663.1	31,608.9	41,028.6	23,568.1	25,514.0	34,933.7
6	2	7,231.4	7,701.8	28,755.4	4,671.5	5,142.0	26,195.6
6	3	2,831.3	3,015.5	11,258.8	1,050.8	1,235.0	9,478.2
4	4	1,656.9	1,765.6	2,291.8	7,520.9	7,412.2	6,886.0
4	5	6,606.2	7,039.6	9,137.5	3,004.7	2,571.3	473.5
3	6	65,325.5	33,502.3	294,435.1	30,319.3	1,503.8	259,429.0
2	7	62,902.4	67,045.9	14,761.4	1,470.9	2,672.6	49,611.9
2	8	70,687.4	75,343.7	16,588.3	11,091.3	6,435.1	65,190.4
3	9	1,579.6	810.1	7,119.4	26,452.6	27,222.1	20,912.8
6	10	5,622.5	5,988.3	22,357.9	2,719.1	3,084.9	19,454.5
5	11	456.6	486.5	1,121.4	3,949.1	3,919.3	3,284.4
4	12	371.1	395.3	911.2	2,947.6	2,923.3	2,407.4
4	13	1,503.0	1,601.6	2,078.9	7,240.5	7,141.9	6,664.6
6	14	231.7	246.8	921.3	2,993.2	2,978.1	2,303.6
5	15	217.1	231.2	533.0	1,697.4	1,683.2	1,381.4
5	16	16,530.3	17,610.7	40,593.0	12,356.9	13,437.3	36,419.6
5	17	174.3	185.7	428.0	1,412.5	1,401.1	1,158.8
6	18	177.5	189.0	705.7	2,442.6	2,431.0	1,914.3
4	19	1,093.0	1,164.7	1,511.7	5,016.3	4,944.6	4,597.6
1	LTS	<u>294,506.2</u>	<u>313,433.8</u>	<u>72,828.6</u>	<u>12,118.5</u>	<u>31,046.1</u>	<u>209,559.1</u>
<b>Total</b>		<b><u>569,367.0</u></b>	<b><u>569,367.0</u></b>	<b><u>569,367.0</u></b>	<b><u>164,043.9</u></b>	<b><u>154,698.8</u></b>	<b><u>762,256.3</u></b>
Add: Special Taxes							
Excise Tax			44,151.0				
Tax from Treasury-Bills			5,979.0				
Stock Transactions Tax			1,701.0		<u>11,867.6</u>	<u>11,843.2</u>	<u>78,169.7</u>
Travel Tax			345.0				
Overall Goal			<b><u>675,353.0</u></b>				

### Simulation #10: Retroactive Application to CY 2006

- Using CY 2002-05 Data,
- Clustering Applied After Regression
- Band Adjustment is Predicted  $\pm 10\%$  Monthly Average,
- Contribution to Growth is Used as Allocation Criterion in Cluster; and
- Share of Region to Cluster for Region

Regional Cluster	Contribution to Growth			Allocation Coefficient			Cluster Goal Allocation (Php M)		
	CY 2004-05	Ave CY2002-05	Ave CY2003-05	CY 2004-05	Ave CY2002-05	Ave CY2003-05	CY 2004-05	Ave CY2002-05	Ave CY2003-05
C1: LTS	0.0272	0.0032	0.00460	0.1279	0.5173	0.5505	72,828.6	294,506.2	313,433.8
C2: 7&8	0.0117	0.0014	0.00209	0.0551	0.2346	0.2501	31,349.7	133,589.8	142,389.5
C3: 6&9	0.1128	0.0007	0.00050	0.5296	0.1175	0.0603	301,554.5	66,905.1	34,312.4
C4: 1,4,5,13,19	0.0210	0.0004	0.00063	0.0984	0.0712	0.0758	56,048.5	40,522.3	43,180.5
C5: 11,12,15,16,17	0.0163	0.0002	0.00028	0.0766	0.0312	0.0332	43,586.6	17,749.3	18,909.4
C6: 2,3,10,14,18	0.0239	0.0002	0.00025	0.1124	0.0283	0.0301	63,999.1	16,094.4	17,141.4
<b>Total</b>	<b>0.2130</b>	<b>0.0061</b>	<b>0.00836</b>	<b>1.0</b>	<b>1.0</b>	<b>1.0</b>	<b>569,367.0</b>	<b>569,367.0</b>	<b>569,367.0</b>

Cluster Assignment	Revenue Region	Goal Allocation Based on Region's Share in Cluster			Comparison Using Absolute Deviation		
		Ave CY2002-05	Ave CY2003-05	CY 2004-05	Ave CY2002-05	Ave CY2003-05	CY 2004-05
4	1	5,074.5	5,407.4	7,018.8	1,020.5	687.6	923.8
6	2	3,554.6	3,785.8	14,134.7	994.7	1,226.0	11,574.8
6	3	2,247.5	2,393.8	8,937.3	467.0	613.2	7,156.8
4	4	9,753.2	10,393.0	13,490.2	575.4	1,215.2	4,312.4
4	5	10,413.7	11,096.8	14,403.8	802.8	1,485.9	4,792.8
3	6	36,520.3	18,729.5	164,604.3	1,514.2	16,276.6	129,598.2
2	7	62,902.4	67,045.9	14,761.4	1,470.9	2,672.6	49,611.9
2	8	70,687.4	75,343.7	16,588.3	11,091.3	6,435.1	65,190.4
3	9	30,384.8	15,582.9	136,950.2	2,352.6	12,449.3	108,918.0
6	10	3,372.1	3,591.5	13,409.2	468.7	688.1	10,505.8
5	11	4,769.2	5,080.9	11,711.6	363.4	675.1	7,305.8
4	12	3,875.4	4,128.7	9,516.7	556.7	810.0	6,198.1
4	13	8,847.4	9,427.7	12,237.3	103.9	684.2	3,493.8
6	14	3,918.5	4,173.5	15,582.0	693.7	948.6	12,357.2
5	15	2,266.9	2,415.1	5,566.8	352.5	500.7	3,652.4
5	16	5,017.4	5,345.4	12,321.2	844.0	1,172.0	8,147.8
5	17	1,820.4	1,939.4	4,470.2	233.6	352.6	2,883.5
6	18	3,001.6	3,196.9	11,935.9	381.6	576.8	9,315.8
4	19	6,433.5	6,855.5	8,898.5	324.2	746.2	2,789.2
1	LTS	<u>294,506.2</u>	<u>313,433.8</u>	<u>72,828.6</u>	<u>12,118.5</u>	<u>31,046.1</u>	<u>209,559.1</u>
<b>Total</b>		<b><u>569,367.0</u></b>	<b><u>569,367.0</u></b>	<b><u>569,367.0</u></b>	<b><u>36,730.2</u></b>	<b><u>81,262.0</u></b>	<b><u>658,287.7</u></b>
Add: Special Taxes							
Excise Tax			44,151.0				
Tax from Treasury-Bills			5,979.0				
Stock Transactions Tax			1,701.0	<b><u>Root Mean Square Error</u></b>			
Travel Tax			345.0	<b><u>3,777.5</u></b>	<b><u>8,496.9</u></b>	<b><u>63,270.2</u></b>	
Overall Goal			<b><u>675,353.0</u></b>				

**Simulation #11: Retroactive Application to CY 2006 (Using CY 2002-05 Data), Region  
(These are the results cited in the main report.)**

> Adjustment Table (in Php M)

Revenue Region	<u>Predicted Collection from Regression with Time</u>				<u>Adjusted Collection (Pred +/- 10%MoAve Band)</u>			
	Pred_2002	Pred_2003	Pred_2004	Pred_2005	2002	2003	2004	2005
1	3,305.1	3,306.8	3,308.4	3,310.1	3,277.6	3,279.2	3,280.9	3,337.7
2	2,316.4	2,317.6	2,318.8	2,319.9	2,297.1	2,298.3	2,299.4	2,339.2
3	1,459.9	1,460.7	1,461.4	1,462.1	1,447.8	1,448.5	1,458.7	1,474.3
4	6,299.9	6,303.1	6,306.2	6,309.4	6,247.4	6,250.6	6,358.8	6,362.0
5	6,731.2	6,734.6	6,737.9	6,741.3	6,675.1	6,678.4	6,784.8	6,797.5
6	23,718.8	23,730.6	23,742.5	23,754.3	23,521.1	23,928.4	23,544.6	23,952.3
7	40,577.9	40,598.1	40,618.4	40,638.7	40,239.7	40,259.8	40,956.9	40,977.3
8	45,599.9	45,622.7	45,645.5	45,668.3	45,219.9	45,242.5	46,025.9	46,048.8
9	19,570.7	19,580.5	19,590.3	19,600.0	19,407.6	19,417.3	19,753.5	19,763.4
10	2,194.2	2,195.3	2,196.4	2,197.5	2,175.9	2,177.0	2,184.8	2,215.8
11	3,082.5	3,084.1	3,085.6	3,087.2	3,056.8	3,058.4	3,111.3	3,112.9
12	2,504.8	2,506.1	2,507.3	2,508.6	2,484.0	2,485.2	2,528.2	2,529.5
13	5,714.8	5,717.7	5,720.5	5,723.4	5,667.2	5,670.0	5,768.2	5,771.1
14	2,532.5	2,533.8	2,535.1	2,536.3	2,511.4	2,512.7	2,556.2	2,557.5
15	1,465.2	1,465.9	1,466.7	1,467.4	1,453.0	1,453.7	1,478.9	1,479.6
16	3,270.0	3,271.7	3,273.3	3,274.9	3,242.8	3,244.4	3,246.0	3,302.2
17	1,176.6	1,177.2	1,177.8	1,178.3	1,166.8	1,167.4	1,187.6	1,188.2
18	1,939.9	1,940.9	1,941.9	1,942.8	1,923.7	1,924.7	1,958.0	1,959.0
19	4,155.6	4,157.7	4,159.8	4,161.9	4,121.0	4,123.1	4,194.5	4,196.6
LTS	189,670.0	189,770.0	189,860.0	189,960.0	188,089.4	188,188.6	191,442.2	191,543.0

➤ *Coefficient Generation*

Revenue Region	<u>Year-Over-Year Growth</u>			<u>Contribution to Growth</u>			<u>Allocation Coefficient</u>	
	Ave CY 2002-05	Ave CY2003-05	CY 2004-05	Ave CY2002-05	Ave CY2003-05	CY 2004-05	Ave CY2002-	Ave CY2003-05
1	0.6104	0.8907	1.7314	0.0054	0.0079	0.0153	0.0089	0.0095
2	0.6104	0.8907	1.7314	0.0038	0.0055	0.0108	0.0062	0.0066
3	0.6082	0.8873	1.0686	0.0024	0.0035	0.0042	0.0039	0.0042
4	0.6104	0.8907	0.0499	0.0105	0.0153	0.0009	0.0172	0.0183
5	0.6097	0.8896	0.1865	0.0112	0.0163	0.0034	0.0183	0.0195
6	0.6197	0.0638	1.7314	0.0389	0.0025	0.1101	0.0638	0.0030
7	0.6104	0.8907	0.0499	0.0674	0.0983	0.0055	0.1105	0.1178
8	0.6104	0.8907	0.0499	0.0757	0.1105	0.0062	0.1242	0.1324
9	0.6104	0.8907	0.0499	0.0325	0.0474	0.0027	0.0533	0.0568
10	0.6090	0.8885	1.4168	0.0036	0.0053	0.0084	0.0059	0.0063
11	0.6104	0.8907	0.0499	0.0051	0.0075	0.0004	0.0084	0.0089
12	0.6104	0.8907	0.0499	0.0042	0.0061	0.0003	0.0068	0.0073
13	0.6104	0.8907	0.0499	0.0095	0.0138	0.0008	0.0156	0.0166
14	0.6104	0.8907	0.0499	0.0042	0.0061	0.0003	0.0069	0.0074
15	0.6104	0.8907	0.0499	0.0024	0.0035	0.0002	0.0040	0.0043
16	0.6104	0.8907	1.7314	0.0054	0.0078	0.0152	0.0088	0.0094
17	0.6104	0.8907	0.0499	0.0020	0.0029	0.0002	0.0032	0.0034
18	0.6104	0.8907	0.0499	0.0032	0.0047	0.0003	0.0053	0.0056
19	0.6104	0.8907	0.0499	0.0069	0.0101	0.0006	0.0113	0.0121
LTS	<u>0.6114</u>	<u>0.8908</u>	<u>0.0527</u>	<u>0.3154</u>	<u>0.4596</u>	<u>0.0272</u>	<u>0.5174</u>	<u>0.5507</u>
Total	<u>0.6096</u>	<u>0.8344</u>	<u>0.2130</u>	<u>0.6096</u>	<u>0.8344</u>	<u>0.2130</u>	<u>1.0</u>	<u>1.0</u>

## Simulation #11: Retroactive Application to CY 2006 (Using CY 2002-05 Data) - Region

### ➤ Goal Allocation to Revenue Regions, CY 2006

Revenue Region	Total Collection CY 2006	Goal Allocated				Absolute Deviation of Collection Less Goal			
		Per RMO		Contribution to Growth		Per RMO		Contribution to Growth	
		6-2006	26-2006	Ave CY2002-05	Ave CY2003-05	6-2006	26-2006	Ave CY2002-05	Ave CY2003-05
1	6,095.0	4,330.9	5,402.8	5,057.8	5,389.2	1,764.0	692.2	<b>1,037.2</b>	705.7
2	2,559.8	2,669.5	2,559.6	3,544.8	3,777.1	109.7	0.2	985.0	1,217.3
3	1,780.5	1,838.5	1,738.7	2,245.7	2,393.3	58.0	41.8	465.2	612.8
4	9,177.8	9,306.0	9,268.1	9,769.4	10,413.5	128.2	90.3	591.6	1,235.7
5	9,610.9	11,539.0	9,411.4	10,426.8	11,113.9	1,928.1	199.5	<b>815.9</b>	1,503.0
6	35,006.1	32,068.6	37,401.2	36,350.3	1,687.3	2,937.6	2,395.0	<b>1,344.2</b>	33,318.8
7	64,373.3	64,678.7	62,690.5	62,924.5	67,073.4	305.4	1,682.8	1,448.8	2,700.1
8	81,778.7	74,280.1	76,177.3	70,712.2	75,374.6	7,498.6	5,601.4	11,066.6	6,404.2
9	28,032.2	30,523.5	29,184.7	30,348.5	32,349.5	2,491.3	1,152.5	<b>2,316.3</b>	4,317.3
10	2,903.4	2,849.4	2,822.9	3,366.0	3,586.8	54.0	80.6	462.5	683.4
11	4,405.8	4,815.0	4,377.0	4,780.1	5,095.3	409.3	28.8	<b>374.3</b>	689.5
12	3,318.7	4,006.4	3,331.7	3,884.3	4,140.4	687.8	13.0	<b>565.6</b>	821.7
13	8,743.5	9,011.3	8,757.0	8,862.0	9,446.4	267.8	13.5	<b>118.5</b>	702.9
14	3,224.9	3,453.4	3,277.5	3,927.2	4,186.1	228.6	52.7	702.3	961.3
15	1,914.4	2,055.9	1,871.3	2,272.1	2,421.9	141.4	43.1	357.7	507.5
16	4,173.4	4,522.2	4,145.2	5,004.1	5,332.0	348.8	28.2	830.7	1,158.6
17	1,586.8	1,620.0	1,550.5	1,824.5	1,944.8	33.2	36.3	237.8	358.1
18	2,620.0	2,669.5	2,486.0	3,008.2	3,206.6	49.5	134.0	388.2	586.5
19	6,109.3	6,342.6	6,127.0	6,444.2	6,869.1	233.3	17.8	334.9	759.8
LTS	282,387.7	296,786.5	296,786.5	294,614.3	313,565.8	14,398.8	14,398.8	<b>12,226.7</b>	31,178.1
Total	<u>559,802.2</u>	<u>569,367.0</u>	<u>569,367.0</u>	<u>569,367.0</u>	<u>569,367.0</u>	<u>34,073.3</u>	<u>26,702.3</u>	<u>36,669.9</u>	<u>90,422.2</u>
Add: Special Taxes									
Excise Tax	58,324.5			44,151.0					
Tax from T-Bills	32,390.1			59,789.0					
Stock Transfer Tax	2,319.6			1,701.0		<b>846.0</b>	789.2	<b>846.8</b>	2,324.3
Travel Tax	<u>445.6</u>			<u>345.0</u>					
Overall Total	53,281.9			<b>675,353.0</b>					

## Simulation #11: Retroactive Application to CY 2006 (Using CY 2002-05 Data), District

### ➤ Adjustment Table

Revenue		Predicted Collection From Regression				Adjusted Collection (Pred +/- 10%MoAve Band)			
Region	District	CY 2002	CY 2003	CY 2004	CY 2005	CY 2002	CY 2003	CY 2004	CY 2005
1	1	334.7	381.9	429.1	476.2	337.6	378.9	432.7	478.4
	2	382.7	426.6	470.4	514.2	386.1	423.2	473.7	518.5
	3	603.9	633.0	662.2	691.3	609.3	628.2	656.9	697.4
	4	495.7	612.9	730.1	847.3	500.1	608.0	724.5	854.8
	5	255.2	488.6	722.1	955.6	258.6	485.2	718.6	965.4
	6	444.7	500.8	556.8	612.9	448.6	497.0	561.8	608.5
2	7	67.5	75.1	82.7	90.3	68.1	74.5	83.4	91.0
	8	908.7	1,406.0	1,903.4	2,400.7	919.5	1,396.9	1,892.2	2,424.7
	9	355.1	340.6	326.1	311.6	355.0	337.8	328.9	309.0
	10	53.8	61.7	69.5	77.4	54.3	62.2	69.0	78.1
	11	109.7	116.5	123.3	130.1	110.7	115.6	122.3	131.2
	12	58.8	63.2	67.6	72.0	58.3	63.8	67.1	72.6
3	13	644.6	645.4	646.1	646.9	639.4	651.0	648.8	641.6
	14	169.4	189.3	209.2	229.1	170.8	190.9	207.6	231.1
	15	491.3	536.7	582.2	627.6	495.6	532.5	577.5	633.0
	16	43.7	52.3	60.8	69.3	44.1	51.8	60.4	70.0
4	17	814.2	929.7	1,045.3	1,160.8	821.1	937.7	1,037.1	1,170.8
	18	323.1	372.8	422.6	472.4	325.9	369.9	420.0	476.4
	19	606.8	703.4	799.9	896.5	612.4	698.0	793.7	904.4
	20	627.7	650.5	673.2	696.0	632.5	646.4	667.7	701.6
	21	2,151.9	2,482.5	2,813.0	3,143.6	2,170.5	2,462.6	2,796.0	3,170.2
	22	69.6	75.8	82.0	88.2	70.2	75.2	81.4	89.0
	23	632.3	730.0	827.8	925.5	637.9	724.4	821.2	933.6
5	24	1,123.7	1,294.6	1,465.4	1,636.3	1,134.0	1,284.7	1,454.1	1,650.8
	25	1,925.5	2,131.9	2,338.3	2,544.7	1,942.4	2,115.0	2,319.7	2,566.8
	26	1,044.1	1,178.6	1,313.1	1,447.6	1,053.4	1,169.5	1,302.4	1,460.1
	27	1,436.8	1,728.9	2,020.9	2,313.0	1,448.9	1,743.4	2,004.9	2,332.7
6	29	966.3	1,197.9	1,429.6	1,661.2	974.9	1,188.7	1,417.8	1,675.5
	30	1,283.5	1,339.8	1,396.2	1,452.6	1,296.3	1,330.6	1,387.1	1,467.0
	31	759.6	841.3	923.0	1,004.6	766.0	840.8	915.5	1,013.2
	32	1,607.8	1,742.0	1,876.1	2,010.3	1,621.7	1,727.7	1,861.5	2,027.8
	33	12,727.2	14,913.3	17,099.4	19,285.4	12,624.2	15,066.2	17,004.9	19,468.6
	34	1,508.7	1,648.9	1,789.1	1,929.3	1,521.7	1,662.8	1,775.5	1,946.2
	35	76.4	82.7	89.0	95.3	77.0	82.0	89.7	96.1
	36	311.2	383.6	455.9	528.3	313.9	380.5	452.2	532.8
	37	108.6	123.4	138.3	153.1	109.5	122.4	137.1	154.4
	7	28	910.9	1,073.4	1,236.0	1,398.6	919.0	1,065.2	1,225.9
38		3,647.3	3,947.7	4,248.2	4,548.6	3,676.0	3,933.0	4,213.3	4,586.9
39		8,529.9	8,935.6	9,341.3	9,747.1	8,607.3	8,870.4	9,295.5	9,831.6
40		4,480.4	5,464.5	6,448.6	7,432.7	4,443.4	5,510.8	6,397.2	7,438.8
41		4,059.0	4,633.3	5,207.6	5,781.9	4,061.8	4,632.6	5,200.7	5,786.7
42		1,318.4	1,472.5	1,626.7	1,780.8	1,329.5	1,460.4	1,627.1	1,787.5

## Simulation #11: Retroactive Application to CY 2006 (Using CY 2002-05 Data), District

➤ Adjustment Table .. continued

Region	District	Predicted Collection From Regression				Adjusted Collection (Pred +/- 10%MoAve Band)			
		CY 2002	CY 2003	CY 2004	CY 2005	CY 2002	CY 2003	CY 2004	CY 2005
	43	8,803.0	10,262.8	11,722.5	13,182.3	8,878.6	10,180.1	11,625.9	13,293.8
	45	1,131.8	1,338.5	1,545.2	1,751.8	1,141.3	1,350.0	1,533.3	1,767.0
	46	1,222.3	1,309.7	1,397.0	1,484.4	1,232.8	1,306.3	1,386.5	1,497.6
8	44	1,969.1	2,526.7	3,084.4	3,642.1	1,985.7	2,548.0	3,059.9	3,673.1
	47	7,620.4	8,740.0	9,859.6	10,979.2	7,687.1	8,669.4	9,782.5	11,074.8
	48	3,203.4	3,420.8	3,638.2	3,855.6	3,177.6	3,451.3	3,609.2	3,876.7
	49	4,038.8	4,518.3	4,997.9	5,477.4	4,074.0	4,483.1	5,039.9	5,523.6
	50	8,845.3	10,324.6	11,804.0	13,283.4	8,922.3	10,244.4	11,904.0	13,389.5
	51	2,917.5	3,242.6	3,567.6	3,892.7	2,943.5	3,217.3	3,539.3	3,926.7
	52	2,897.8	3,541.9	4,185.9	4,829.9	2,923.8	3,514.5	4,152.1	4,871.7
	53	5,412.0	6,406.8	7,401.6	8,396.4	5,367.8	6,461.8	7,348.5	8,369.9
9	54	4,016.9	4,859.1	5,701.3	6,543.4	4,052.6	4,821.2	5,655.1	6,599.7
	55	898.7	855.0	811.2	767.5	907.1	848.3	806.3	775.3
	56	2,123.1	2,883.8	3,644.5	4,405.3	2,141.6	2,860.6	3,615.3	4,443.0
	57	3,141.9	3,918.0	4,694.2	5,470.4	3,170.7	3,890.0	4,734.6	5,516.7
	58	1,313.5	1,307.9	1,302.3	1,296.8	1,324.9	1,297.4	1,292.2	1,308.2
	59	982.9	1,215.6	1,448.4	1,681.2	991.5	1,205.8	1,437.1	1,695.8
	60	2,027.6	2,581.7	3,135.8	3,689.9	2,014.6	2,608.8	3,162.4	3,661.3
	61	98.5	110.5	122.4	134.3	98.9	109.5	123.4	133.3
	62	43.6	54.8	66.0	77.2	44.0	54.4	65.5	77.9
	63	180.1	211.5	242.8	274.2	181.7	209.8	240.9	276.6
10	64	151.3	187.2	223.1	259.0	152.7	185.8	221.4	261.3
	65	410.9	490.6	570.3	650.0	414.6	486.8	565.9	655.7
	66	131.5	143.9	156.3	168.7	132.7	142.8	155.1	170.2
	67	1,014.2	964.0	913.8	863.7	1,009.4	972.1	912.0	862.1
	68	117.0	143.9	170.9	197.8	118.1	142.8	169.5	199.5
	69	65.8	76.4	87.0	97.7	66.4	75.8	86.4	98.5
	70	83.5	115.8	148.1	180.4	84.3	114.9	146.9	182.0
11	71	138.0	203.6	269.2	334.8	139.4	202.1	267.2	337.8
	72	186.9	225.9	264.8	303.8	188.6	224.1	262.8	306.5
	73	82.5	124.6	166.8	209.0	83.2	123.7	165.6	210.9
	74	1,937.8	2,116.7	2,295.7	2,474.7	1,954.2	2,099.6	2,315.0	2,480.3
	75	221.8	241.2	260.7	280.1	223.8	239.5	262.9	282.5
12	76	304.3	414.9	525.4	635.9	307.2	412.0	530.0	641.3
	77	1,004.0	1,136.6	1,269.2	1,401.8	1,012.5	1,127.2	1,258.8	1,413.6
	78	187.3	210.3	233.4	256.4	189.0	208.7	231.6	258.7
	79	480.3	567.9	655.4	743.0	484.5	563.4	650.0	749.3
13	80	1,231.7	1,529.0	1,826.2	2,123.5	1,242.7	1,516.9	1,811.9	2,142.0
	81	1,873.2	2,111.4	2,349.7	2,588.0	1,889.3	2,094.0	2,331.4	2,610.4
	82	541.2	643.0	744.7	846.5	545.8	637.8	751.0	848.6
	83	614.9	646.3	677.7	709.1	620.2	641.4	683.8	703.3
	84	350.4	419.9	489.4	558.9	353.5	416.8	486.6	563.7

### Simulation #11: Retroactive Application to CY 2006 (Using CY 2002-05 Data), District

➤ Adjustment Table ... continued

Revenue		Predicted Collection From Regression				Adjusted Collection (Pred +/- 10%MoAve Band)			
Region	District	CY 2002	CY 2003	CY 2004	CY 2005	CY 2002	CY 2003	CY 2004	CY 2005
14	85	119.2	131.0	142.8	154.6	120.3	130.0	144.0	155.9
	86	102.4	116.8	131.2	145.6	103.3	115.9	130.1	146.9
	87	146.4	172.7	199.0	225.3	147.8	171.4	197.5	227.4
	88	849.6	843.6	837.6	831.6	851.5	836.8	844.9	824.8
	89	659.7	953.3	1,246.8	1,540.3	655.2	961.9	1,258.9	1,528.9
	90	109.7	134.5	159.2	184.0	110.7	133.4	158.0	185.6
15	91	170.0	218.1	266.2	314.3	171.6	216.4	264.2	317.1
	92	201.3	229.6	257.8	286.0	203.1	227.7	255.8	288.5
	93	862.9	870.0	877.1	884.2	856.0	877.4	884.9	877.2
	94	41.3	50.0	58.7	67.4	41.6	49.5	58.2	67.9
	95	28.3	29.5	30.8	32.0	28.1	29.8	30.7	31.7
	96	16.7	20.5	24.3	28.1	16.7	20.5	24.5	28.0
16	97	94.3	107.5	120.7	133.8	95.2	106.7	119.7	135.0
	98	1,691.8	1,848.4	2,004.9	2,161.5	1,706.5	1,833.6	1,988.8	2,180.1
	99	493.3	450.3	407.3	364.2	498.1	447.4	404.3	367.8
	100	182.9	209.1	235.3	261.6	184.5	207.4	233.4	263.8
	101	417.4	452.8	488.1	523.4	421.2	449.3	484.0	527.9
	102	97.9	106.1	114.3	122.5	97.4	107.1	113.5	123.6
17	103	390.7	453.6	516.5	579.4	394.1	449.9	512.4	584.3
	104	202.2	220.6	239.1	257.5	201.2	218.8	241.1	255.4
	105	206.7	226.0	245.2	264.5	208.4	226.4	243.4	266.8
	106	191.8	215.2	238.6	262.0	191.5	213.4	240.6	259.8
18	107	574.7	604.9	635.2	665.5	579.7	600.3	640.6	671.2
	108	290.6	285.3	280.1	274.8	291.1	283.3	282.4	274.0
	109	107.0	117.9	128.8	139.6	107.9	117.0	129.9	138.7
	110	419.1	496.9	574.7	652.5	422.9	493.2	579.6	658.1
	111	307.3	355.3	403.3	451.3	310.0	352.4	400.1	455.2
19	112	584.6	694.7	804.7	914.8	589.6	689.1	811.5	914.5
	113	2,556.5	2,872.3	3,188.1	3,503.8	2,578.5	2,849.1	3,162.1	3,533.7
	114	103.7	120.2	136.8	153.4	104.6	119.4	138.0	154.7
	115	195.1	231.8	268.4	305.0	196.8	229.9	270.7	302.5
LTS	LTS	117,040.0	133,140.0	149,240.0	165,340.0	118,036.6	132,057.0	148,007.0	166,733.8
	EXCISE	26,053.3	30,225.7	34,398.1	38,570.6	26,046.3	30,466.6	34,115.3	38,797.5
	LTDO-MKTI	9,417.5	10,187.6	10,957.8	11,727.9	9,351.9	10,274.2	10,868.1	11,794.3
	LTDO-CEBU	4,664.1	5,371.5	6,079.0	6,786.4	4,705.2	5,328.8	6,030.8	6,845.3
		302,076.8	345,716.0	389,355.2	432,994.4	303,746.7	344,449.9	386,973.2	435,875.2

## Simulation #11: Retroactive Application to CY 2006 (Using CY 2002-05 Data), District

### ➤ Allocation Coefficient Derivation

Region	Revenue District	Share on Annual Collection			Allocation Coefficient (RDO Share in Total)		
		Ave 2002-05	Ave 2003-05	Ave 2004-05	Ave 2002-05	Ave 2003-05	Ave 2004-05
1	1	0.0011	0.0011	0.0011	0.1228	0.1204	0.1185
	2	0.0012	0.0012	0.0012	0.1359	0.1321	0.1290
	3	0.0018	0.0017	0.0016	0.1956	0.1851	0.1761
	4	0.0018	0.0019	0.0019	0.2028	0.2042	0.2053
	5	0.0017	0.0019	0.0020	0.1832	0.2025	0.2190
	6	0.0014	0.0014	0.0014	0.1597	0.1557	0.1522
2	7	0.0002	0.0002	0.0002	0.0341	0.0322	0.0308
	8	0.0045	0.0049	0.0052	0.7143	0.7401	0.7614
	9	0.0009	0.0008	0.0008	0.1433	0.1264	0.1125
	10	0.0002	0.0002	0.0002	0.0284	0.0271	0.0259
	11	0.0003	0.0003	0.0003	0.0517	0.0478	0.0447
	12	0.0002	0.0002	0.0002	0.0282	0.0264	0.0246
3	13	0.0018	0.0017	0.0016	0.4415	0.4318	0.4203
	14	0.0005	0.0005	0.0005	0.1369	0.1400	0.1429
	15	0.0015	0.0015	0.0015	0.3829	0.3877	0.3943
	16	0.0002	0.0002	0.0002	0.0387	0.0405	0.0425
4	17	0.0027	0.0027	0.0027	0.1571	0.1575	0.1570
	18	0.0011	0.0011	0.0011	0.0631	0.0634	0.0637
	19	0.0020	0.0021	0.0021	0.1192	0.1199	0.1207
	20	0.0018	0.0017	0.0017	0.1049	0.1009	0.0974
	21	0.0072	0.0072	0.0072	0.4198	0.4219	0.4242
	22	0.0002	0.0002	0.0002	0.0125	0.0123	0.0121
	23	0.0021	0.0021	0.0021	0.1235	0.1241	0.1248
	24	0.0038	0.0038	0.0038	0.2047	0.2051	0.2057
5	25	0.0061	0.0060	0.0059	0.3315	0.3271	0.3238
	26	0.0034	0.0034	0.0034	0.1848	0.1837	0.1830
	27	0.0051	0.0052	0.0053	0.2791	0.2841	0.2874
	28	0.0031	0.0032	0.0032	0.0284	0.0289	0.0293
6	29	0.0036	0.0037	0.0038	0.0553	0.0565	0.0579
	30	0.0037	0.0036	0.0035	0.0576	0.0552	0.0534
	31	0.0024	0.0024	0.0023	0.0372	0.0365	0.0361
	32	0.0049	0.0048	0.0047	0.0761	0.0741	0.0728
	33	0.0436	0.0441	0.0443	0.6745	0.6797	0.6827
	34	0.0047	0.0046	0.0045	0.0726	0.0710	0.0697
	35	0.0002	0.0002	0.0002	0.0036	0.0035	0.0035
	36	0.0011	0.0012	0.0012	0.0177	0.0180	0.0184
	37	0.0004	0.0004	0.0004	0.0055	0.0055	0.0055
	38	0.0112	0.0109	0.0107	0.1010	0.0993	0.0979
7	39	0.0249	0.0240	0.0232	0.2253	0.2184	0.2127
	40	0.0162	0.0166	0.0168	0.1464	0.1509	0.1539
	41	0.0134	0.0134	0.0133	0.1211	0.1218	0.1222
	42	0.0042	0.0042	0.0041	0.0382	0.0380	0.0380
	43	0.0299	0.0301	0.0303	0.2706	0.2738	0.2772
	44	0.0039	0.0040	0.0040	0.0356	0.0363	0.0367
	45	0.0039	0.0040	0.0040	0.0356	0.0363	0.0367
	46	0.0037	0.0036	0.0035	0.0334	0.0327	0.0321

## Simulation #11: Application to CY 2006 (Using CY 2002-05 Data), District

### ➤ Allocation Coefficient Derivation ... continued

Region	Revenue District	Share on Annual Collection			Allocation Coefficient (RDO Share in Total)		
		Ave 2002-05	Ave 2003-05	Ave 2004-05	Ave 2002-05	Ave 2003-05	Ave 2004-05
8	44	0.0077	0.0079	0.0082	0.0616	0.0637	0.0653
	47	0.0253	0.0253	0.0253	0.2036	0.2026	0.2022
	48	0.0096	0.0094	0.0091	0.0772	0.0751	0.0726
	49	0.0130	0.0129	0.0128	0.1046	0.1032	0.1024
	50	0.0302	0.0304	0.0307	0.2432	0.2439	0.2452
	51	0.0093	0.0092	0.0091	0.0745	0.0733	0.0724
	52	0.0105	0.0107	0.0110	0.0846	0.0860	0.0875
	53	0.0187	0.0190	0.0191	0.1507	0.1522	0.1524
9	54	0.0144	0.0146	0.0149	0.2693	0.2688	0.2686
	55	0.0023	0.0021	0.0019	0.0425	0.0383	0.0347
	56	0.0089	0.0094	0.0098	0.1665	0.1719	0.1766
	57	0.0118	0.0121	0.0125	0.2207	0.2226	0.2247
	58	0.0035	0.0033	0.0032	0.0666	0.0614	0.0570
	59	0.0036	0.0037	0.0038	0.0679	0.0683	0.0687
	60	0.0078	0.0081	0.0083	0.1459	0.1485	0.1496
	61	0.0003	0.0003	0.0003	0.0059	0.0058	0.0056
	62	0.0002	0.0002	0.0002	0.0031	0.0031	0.0031
	63	0.0006	0.0006	0.0006	0.0116	0.0114	0.0113
10	64	0.0006	0.0006	0.0006	0.0935	0.0982	0.1030
	65	0.0014	0.0015	0.0015	0.2416	0.2510	0.2607
	66	0.0004	0.0004	0.0004	0.0684	0.0688	0.0694
	67	0.0026	0.0024	0.0022	0.4275	0.4034	0.3786
	68	0.0004	0.0004	0.0004	0.0717	0.0752	0.0787
	69	0.0002	0.0002	0.0002	0.0372	0.0383	0.0395
	70	0.0004	0.0004	0.0004	0.0601	0.0652	0.0702
	11	71	0.0006	0.0007	0.0007	0.0765	0.0825
72		0.0007	0.0007	0.0007	0.0794	0.0811	0.0826
73		0.0004	0.0004	0.0005	0.0472	0.0511	0.0546
74		0.0060	0.0059	0.0058	0.7154	0.7050	0.6958
75		0.0007	0.0007	0.0007	0.0816	0.0803	0.0791
12		76	0.0013	0.0014	0.0014	0.1883	0.1968
	77	0.0033	0.0033	0.0032	0.4794	0.4723	0.4661
	78	0.0006	0.0006	0.0006	0.0885	0.0869	0.0855
	79	0.0017	0.0017	0.0017	0.2438	0.2440	0.2441
	13	80	0.0046	0.0047	0.0048	0.2933	0.2999
81		0.0061	0.0060	0.0060	0.3899	0.3857	0.3821
82		0.0019	0.0019	0.0019	0.1216	0.1227	0.1237
83		0.0018	0.0017	0.0017	0.1157	0.1112	0.1073
84		0.0012	0.0013	0.0013	0.0795	0.0804	0.0812
14		85	0.0004	0.0004	0.0004	0.0543	0.0527
	86	0.0003	0.0003	0.0003	0.0489	0.0482	0.0477
	87	0.0005	0.0005	0.0005	0.0734	0.0731	0.0732
	88	0.0023	0.0021	0.0020	0.3311	0.3075	0.2877
	89	0.0030	0.0032	0.0034	0.4344	0.4599	0.4804
	90	0.0004	0.0004	0.0004	0.0580	0.0585	0.0592

## Simulation #11: Application to CY 2006 (Using CY 2002-06 Data), District

➤ Allocation Coefficient Derivation ... continued

Region	Revenue		Share on Annual Collection			Allocation Coeff. (Share in Region's Total)		
	District		Ave 2002-05	Ave 2003-05	Ave 2004-05	Ave 2002-05	Ave 2003-05	Ave 2004-05
15	91		0.0007	0.0007	0.0007	0.1652	0.1753	0.1858
	92		0.0007	0.0007	0.0007	0.1662	0.1697	0.1740
	93		0.0024	0.0023	0.0021	0.5958	0.5801	0.5632
	94		0.0001	0.0002	0.0002	0.0370	0.0386	0.0403
	95		0.0001	0.0001	0.0001	0.0205	0.0203	0.0200
	96		0.0001	0.0001	0.0001	0.0153	0.0160	0.0168
16	97		0.0003	0.0003	0.0003	0.0349	0.0358	0.0367
	98		0.0052	0.0051	0.0051	0.5886	0.5947	0.6005
	99		0.0012	0.0010	0.0009	0.1311	0.1208	0.1112
	100		0.0006	0.0006	0.0006	0.0679	0.0698	0.0716
	101		0.0013	0.0013	0.0012	0.1437	0.1448	0.1458
	102		0.0003	0.0003	0.0003	0.0337	0.0341	0.0342
17	103		0.0013	0.0013	0.0013	0.4122	0.4166	0.4212
	104		0.0006	0.0006	0.0006	0.1947	0.1927	0.1907
	105		0.0006	0.0006	0.0006	0.2007	0.1984	0.1959
	106		0.0006	0.0006	0.0006	0.1923	0.1923	0.1922
18	107		0.0017	0.0016	0.0016	0.3200	0.3147	0.3101
	108		0.0008	0.0007	0.0007	0.1452	0.1382	0.1315
	109		0.0003	0.0003	0.0003	0.0634	0.0635	0.0635
	110		0.0015	0.0015	0.0015	0.2766	0.2849	0.2926
	111		0.0010	0.0010	0.0010	0.1949	0.1988	0.2022
19	112		0.0020	0.0021	0.0021	0.1805	0.1833	0.1858
	113		0.0082	0.0082	0.0081	0.7284	0.7245	0.7209
	114		0.0004	0.0004	0.0004	0.0310	0.0313	0.0315
	115		0.0007	0.0007	0.0007	0.0601	0.0610	0.0617
LTS	LTS		0.3839	0.3827	0.3824	0.7437	0.7430	0.7437
	EXCISE		0.0880	0.0885	0.0886	0.1704	0.1719	0.1723
	LTDO-MKTI		0.0287	0.0282	0.0275	0.0557	0.0548	0.0536
	LTDO-CEBU		0.0156	0.0156	0.0156	0.0302	0.0303	0.0304
<b>Total</b>			1.0	1.0	1.0	(total per region sums up to 1.0)		

## Simulation #11: Application to CY 2006 (Using CY 2002-05 Data), District

### ➤ Comparative Allocations

Region	Revenue		CY 2006 Collection	Alternative Methodology (C2G for Region, Share for RDO)		
	District			Ave 2002-05	Ave 2003-05	Ave 2004-05
1	1		534,737,426	621,219,219	609,120,083	599,164,551
	2		645,718,992	687,560,273	668,323,418	652,471,530
	3		795,629,258	989,153,975	936,049,728	890,567,943
	4		1,000,405,632	1,025,690,779	1,032,779,240	1,038,559,474
	5		2,484,458,592	926,596,170	1,024,257,365	1,107,450,856
	6		634,001,007	807,579,584	787,270,166	769,585,646
2	7		97,901,424	121,039,331	114,306,835	109,048,576
	8		1,792,628,564	2,532,058,738	2,623,432,936	2,699,021,099
	9		360,758,793	507,973,341	448,029,466	398,880,357
	10		88,056,903	100,644,612	96,124,723	91,986,493
	11		143,836,924	183,144,946	169,487,197	158,524,711
	12		76,656,058	99,939,031	93,418,844	87,338,763
3	13		704,134,182	991,383,635	969,672,915	943,953,394
	14		265,553,352	307,446,916	314,443,116	320,890,013
	15		737,273,337	859,951,273	870,601,176	885,524,737
	16		73,553,449	86,918,176	90,982,792	95,331,855
4	17		1,430,326,237	1,534,849,921	1,538,249,547	1,533,779,292
	18		630,296,872	616,129,444	619,311,358	622,775,361
	19		1,123,539,589	1,164,108,973	1,171,769,949	1,179,642,765
	20		757,657,275	1,024,698,710	985,715,231	951,207,992
	21		4,044,118,568	4,101,318,528	4,121,918,306	4,144,635,692
	22		101,768,387	122,149,731	120,054,293	118,322,930
	23		1,090,085,785	1,206,144,693	1,212,381,317	1,219,035,968
5	24		1,998,695,733	2,134,491,175	2,138,395,423	2,145,248,108
	25		2,922,335,357	3,456,098,425	3,410,663,954	3,376,063,101
	26		1,684,777,548	1,926,467,078	1,915,429,038	1,908,606,595
	27		3,005,116,830	2,909,743,322	2,962,311,585	2,996,882,196
6	29		1,703,312,980	2,008,726,026	2,052,794,247	2,104,760,143
	30		1,564,290,175	2,094,336,795	2,006,130,332	1,941,989,684
	31		1,252,470,457	1,350,935,887	1,327,656,529	1,312,299,847
	32		2,443,957,260	2,766,024,777	2,692,822,800	2,646,425,794
	33		24,710,726,358	24,517,778,461	24,708,065,329	24,817,461,525
	34		2,426,789,649	2,638,918,806	2,581,319,036	2,532,327,325
	35		111,513,693	131,793,045	128,419,974	126,447,145
	36		620,373,619	641,765,892	654,657,779	670,246,652
	37		172,707,934	200,020,311	198,433,975	198,341,886
	7					
7	28		1,707,277,365	1,789,239,151	1,816,728,721	1,845,298,985
	38		5,578,979,104	6,353,907,270	6,249,096,217	6,159,161,976
	39		18,335,829,105	14,174,008,975	13,740,469,815	13,386,909,997
	40		9,272,865,651	9,211,957,507	9,494,886,714	9,683,701,574
	41		7,522,462,952	7,621,116,580	7,665,892,706	7,690,026,707
	42		2,231,644,173	2,402,488,167	2,392,544,386	2,389,864,511

## Simulation #11: Application to CY 2006 (Using CY 2002-06 Data), District

### ➤ Comparative Allocations ... continued

Revenue		CY 2006 Collection	Alternative Methodology (C2G for Region, Share for RDO)		
Region	District		Ave 2002-05	Ave 2003-05	Ave 2004-05
	43	15,387,518,138	17,029,203,418	17,226,087,958	17,441,119,364
	45	2,336,870,834	2,242,610,843	2,282,255,776	2,309,880,189
	46	1,999,847,858	2,099,968,089	2,056,537,706	2,018,536,697
8	44	7,639,095,068	4,357,994,215	4,503,373,469	4,616,065,114
	47	13,999,122,988	14,394,294,771	14,327,027,629	14,299,429,486
	48	7,346,011,584	5,459,609,270	5,306,967,474	5,132,169,273
	49	7,028,991,421	7,395,876,549	7,300,999,010	7,242,215,519
	50	18,810,075,133	17,197,256,875	17,243,829,753	17,340,844,245
	51	5,963,635,261	5,270,840,193	5,183,787,928	5,118,578,876
	52	5,725,613,489	5,980,742,133	6,083,872,873	6,186,583,806
	53	15,266,189,960	10,655,585,994	10,762,341,864	10,776,313,680
9	54	7,452,071,117	8,173,215,370	8,157,740,114	8,152,354,161
	55	914,862,452	1,290,869,937	1,160,842,054	1,052,150,525
	56	4,728,863,327	5,052,196,524	5,216,254,907	5,360,652,517
	57	6,918,997,742	6,696,808,145	6,755,716,316	6,819,539,970
	58	1,583,092,534	2,020,290,131	1,862,081,843	1,729,866,537
	59	1,932,652,020	2,061,910,890	2,072,746,801	2,084,133,073
	60	3,928,984,169	4,428,125,708	4,506,222,417	4,539,381,868
	61	157,828,076	179,949,827	174,980,417	170,783,247
	62	85,767,872	93,528,404	94,492,246	95,405,520
	63	329,085,226	351,605,064	347,422,885	344,232,581
10	64	348,709,753	314,601,090	330,516,136	346,688,113
	65	745,747,084	813,378,419	844,718,862	877,385,129
	66	205,644,318	230,164,280	231,435,662	233,612,787
	67	1,022,535,055	1,438,869,867	1,357,888,860	1,274,264,902
	68	235,154,675	241,315,120	253,063,366	265,019,565
	69	125,546,437	125,334,719	128,926,397	132,810,627
	70	220,084,044	202,336,505	219,450,718	236,218,877
11	71	395,413,500	365,817,322	394,525,593	419,710,769
	72	344,878,805	379,428,271	387,715,899	394,827,284
	73	672,027,636	225,440,107	244,435,697	261,107,725
	74	2,678,446,708	3,419,569,710	3,369,775,092	3,326,127,297
	75	315,007,265	389,844,590	383,647,719	378,326,924
12	76	572,935,894	731,566,920	764,489,868	793,536,137
	77	1,574,156,428	1,862,120,757	1,834,625,602	1,810,547,845
	78	340,987,334	343,609,384	337,481,790	332,153,790
	79	830,570,855	947,002,938	947,702,740	948,062,229
13	80	2,762,791,942	2,599,016,448	2,658,066,266	2,709,368,302
	81	3,281,834,903	3,455,247,424	3,418,476,120	3,386,322,007
	82	1,076,280,207	1,077,509,151	1,087,097,990	1,096,130,828
	83	935,516,077	1,025,419,041	985,582,875	950,492,646
	84	687,073,188	704,807,937	712,776,749	719,686,217

## Simulation #11: Application to CY 2006 (Using CY 2002-06 Data), District

### ➤ Comparative Allocations ... continued

Region	Revenue		Alternative Methodology (C2G for Region, Share for RDO)		
	District	CY 2006 Collection	Ave 2002-05	Ave 2003-05	Ave 2004-05
14	85	169,360,750	213,085,333	207,134,312	203,009,098
	86	154,747,741	192,163,464	189,279,542	187,465,503
	87	251,637,913	288,123,864	287,234,247	287,531,619
	88	887,836,082	1,300,381,888	1,207,425,244	1,129,982,411
	89	1,556,126,816	1,705,807,303	1,806,290,758	1,886,636,538
	90	205,146,247	227,638,147	229,835,896	232,574,831
15	91	410,751,336	375,375,304	398,341,408	422,138,769
	92	349,877,779	377,597,492	385,483,964	395,243,932
	93	1,024,871,044	1,353,680,916	1,318,066,746	1,279,647,103
	94	59,653,139	84,142,882	87,717,803	91,584,778
	95	38,845,962	46,582,635	46,053,659	45,351,240
	96	30,440,350	34,720,771	36,436,421	38,134,178
16	97	156,631,545	174,452,778	179,162,605	183,612,678
	98	2,432,621,354	2,945,627,138	2,975,906,467	3,005,148,351
	99	482,006,727	656,272,414	604,555,704	556,536,231
	100	318,620,929	339,731,588	349,353,716	358,421,514
	101	627,252,557	719,287,830	724,467,786	729,451,793
	102	156,271,139	168,728,252	170,653,722	170,929,433
17	103	628,171,647	752,136,581	760,091,463	768,438,313
	104	268,885,846	355,232,673	351,578,715	347,924,940
	105	400,280,026	366,262,674	362,002,229	357,493,891
	106	289,444,995	350,868,071	350,827,593	350,642,855
18	107	724,244,178	962,535,923	946,672,680	932,929,646
	108	314,232,689	436,820,269	415,726,602	395,696,205
	109	173,203,892	190,623,562	190,894,406	191,031,071
	110	823,424,259	831,935,232	856,929,520	880,208,064
	111	584,941,005	586,285,014	597,976,792	608,335,014
19	112	1,134,608,439	1,163,301,219	1,181,274,686	1,197,608,894
	113	4,453,846,725	4,693,763,470	4,668,593,733	4,645,834,304
	114	177,042,453	200,012,342	201,522,986	203,054,069
	115	343,795,621	387,122,968	392,808,595	397,702,734
LTS	LTS	202,302,459,993	219,114,305,070	218,907,182,869	219,113,523,827
	EXCISE	50,614,138,245	50,207,718,668	50,650,457,558	50,759,825,622
	LTDO-MKTI	20,462,134,808	16,404,822,943	16,137,188,787	15,776,943,176
	LTDO-CEBU	9,008,947,265	8,887,453,319	8,919,470,787	8,964,007,376
	Total	<u>559,802,242,417</u>	<u>569,367,000,000</u>	<u>569,367,000,000</u>	<u>569,367,000,000</u>
	Add: Special Taxes				
	Excise Taxes	58,324,490,849		44,151,000,000	
	Taxes from T-Bills	32,390,061,980		59,789,000,000	
	Stock Transactions Tax	2,319,597,116		1,701,000,000	
	Travel Tax	445,553,795		345,000,000	
		<u>653,281,946,157</u>		<u>675,353,000,000</u>	
<b>Performance Evaluation</b>					
	Total Deviation (from Collection)		57,224,548,520	56,315,284,663	57,079,324,812
	Root Mean Square Error		<u>1,754, 635,983</u>	<u>1,748,563,491</u>	<u>1,781,615,072</u>

## Simulation #11: Methodology Application to CY 2007 (Using CY 2002-06 Data), Region

### ➤ Adjustment Table

Revenue Region/s	Predicted Collection from Regression					Adjusted Collection (Pred +/- 10%MoAve Band)				
	Pred_2002	Pred_2003	Pred_2004	Pred_2005	Pred_2006	2002	2003	2004	2005	2006
1	3,861.8	3,863.7	3,865.6	3,867.6	3,869.5	3,838.5	3,840.3	3,838.8	3,904.3	3,920.3
2	2,364.2	2,365.4	2,366.6	2,367.7	2,368.9	2,347.9	2,350.9	2,349.8	2,397.4	2,390.3
3	1,523.5	1,524.2	1,525.0	1,525.7	1,526.5	1,512.1	1,512.4	1,512.8	1,539.1	1,541.3
4	6,873.0	6,876.4	6,879.9	6,883.3	6,886.7	6,827.6	6,828.8	6,825.9	6,946.5	6,963.2
5	7,304.4	7,308.1	7,311.7	7,315.4	7,319.0	7,255.7	7,257.8	7,255.2	7,384.4	7,399.1
6	25,966.8	25,979.7	25,992.7	26,005.7	26,018.7	25,804.8	25,768.6	25,836.1	26,267.1	26,310.4
7	45,320.7	45,343.4	45,366.0	45,388.7	45,411.3	45,026.9	45,035.2	45,014.4	45,788.4	45,947.7
8	52,817.5	52,843.8	52,870.2	52,896.6	52,923.0	52,500.0	52,498.4	52,474.3	53,358.8	53,604.5
9	21,255.2	21,265.8	21,276.4	21,287.0	21,297.7	21,127.8	21,119.4	21,104.2	21,493.9	21,531.3
10	2,335.1	2,336.3	2,337.5	2,338.6	2,339.8	2,318.0	2,319.3	2,319.3	2,359.5	2,364.0
11	3,345.9	3,347.6	3,349.3	3,351.0	3,352.6	3,323.6	3,324.6	3,322.6	3,381.7	3,389.3
12	2,666.6	2,667.9	2,669.3	2,670.6	2,671.9	2,649.3	2,649.6	2,660.6	2,696.4	2,699.6
13	6,318.3	6,321.4	6,324.6	6,327.8	6,330.9	6,278.1	6,278.7	6,275.5	6,386.3	6,403.8
14	2,670.0	2,671.3	2,672.6	2,674.0	2,675.3	2,654.0	2,651.7	2,697.0	2,698.5	2,702.2
15	1,554.5	1,555.3	1,556.0	1,556.8	1,557.6	1,543.6	1,543.4	1,543.2	1,570.1	1,573.5
16	3,449.4	3,451.1	3,452.9	3,454.6	3,456.3	3,423.0	3,426.5	3,426.0	3,485.8	3,491.1
17	1,258.2	1,258.8	1,259.4	1,260.0	1,260.7	1,249.8	1,249.6	1,249.3	1,271.6	1,273.9
18	2,075.2	2,076.2	2,077.2	2,078.3	2,079.3	2,060.4	2,061.7	2,060.4	2,096.8	2,101.1
19	4,544.7	4,547.0	4,549.3	4,551.5	4,553.8	4,515.1	4,515.5	4,513.0	4,592.8	4,604.7
LTS	208,140.0	208,240.0	208,350.0	208,450.0	208,560.0	206,807.4	206,773.8	206,696.4	210,324.2	210,913.2
Total	405,644.9	405,843.6	406,052.2	406,250.9	406,459.5	403,063.5	403,006.4	402,974.5	409,943.5	411,124.6

### ➤ Coefficient Generation

Revenue Region	Share		Year-Over-Year Growth			Contribution to Growth			
	Ave CY 2002-06	Ave CY 2003-06	Ave CY 2004-06	Ave 2002-06	Ave 2003-06	Ave 2004-06	Ave 2002-06	Ave 2003-06	Ave 2004-06
1	0.9528	0.9529	0.9529	0.5308	0.6919	1.0581	0.0051	0.0066	0.0101
2	0.5830	0.5832	0.5831	0.4524	0.5601	0.8641	0.0026	0.0033	0.0050
3	0.3752	0.3753	0.3753	0.4824	0.6379	0.9412	0.0018	0.0024	0.0035
4	1.6941	1.6941	1.6940	0.4955	0.6548	1.0038	0.0084	0.0111	0.0170
5	1.8005	1.8006	1.8005	0.4932	0.6482	0.9901	0.0089	0.0117	0.0178
6	6.4029	6.4031	6.4061	0.4887	0.6983	0.9166	0.0313	0.0448	0.0588
7	11.1724	11.1727	11.1720	0.5099	0.6738	1.0338	0.0570	0.0753	0.1155
8	13.0257	13.0258	13.0255	0.5243	0.7000	1.0730	0.0683	0.0911	0.1397
9	5.2399	5.2395	5.2391	0.4771	0.6494	1.0102	0.0250	0.0340	0.0529
10	0.5753	0.5754	0.5754	0.4952	0.6410	0.9628	0.0028	0.0037	0.0055
11	0.8247	0.8247	0.8246	0.4938	0.6482	1.0029	0.0041	0.0053	0.0083
12	0.6579	0.6580	0.6582	0.4723	0.6257	0.7327	0.0031	0.0041	0.0048
13	1.5577	1.5577	1.5576	0.4996	0.6625	1.0197	0.0078	0.0103	0.0159
14	0.6602	0.6607	0.6616	0.4535	0.6332	0.0953	0.0030	0.0042	0.0006
15	0.3829	0.3829	0.3829	0.4848	0.6496	0.9798	0.0019	0.0025	0.0038
16	0.8498	0.8500	0.8499	0.4965	0.6272	0.9483	0.0042	0.0053	0.0081
17	0.3100	0.3100	0.3100	0.4820	0.6472	0.9845	0.0015	0.0020	0.0031
18	0.5113	0.5114	0.5113	0.4938	0.6375	0.9879	0.0025	0.0033	0.0051

Revenue Region	Share			Year-Over-Year Growth			Contribution to Growth		
	Ave CY2002-06	Ave CY 2003-06	Ave CY 2004-06	Ave 2002-06	Ave 2003-06	Ave2004-06	Ave 2002-06	Ave 2003-06	Ave2004-06
19	1.1202	1.1202	1.1201	0.4950	0.6574	1.0141	0.0055	0.0074	0.0114
LTS	51.3033	51.3019	51.3000	0.4954	0.6659	1.0176	0.2541	0.3416	0.5220
	1.0	1.0	1.0	<b>0.4989</b>	<b>0.6699</b>	<b>1.0087</b>	<b>0.4989</b>	<b>0.6699</b>	<b>1.0087</b>

### Simulation #11: Methodology Application to CY 2007 (Using CY 2002-06 Data), Region

➤ Goal Allocation to Revenue Regions, CY 2007

Revenue Region	Allocation Coefficient			Goal Allocation using Contribution to Growth		
	Ave 2002-06	Ave 2003-06	Ave2004-06	Ave 2002-06	Ave 2003-06	Ave2004-06
1	0.01	0.01	0.01	6,818,476,351	6,618,392,444	6,720,830,660
2	0.01	0.00	0.00	3,555,144,919	3,278,019,932	3,358,096,457
3	0.00	0.00	0.00	2,441,895,332	2,404,845,204	2,356,130,586
4	0.02	0.02	0.02	11,317,464,801	11,138,141,172	11,339,056,723
5	0.02	0.02	0.02	11,975,019,721	11,719,617,713	11,887,605,852
6	0.06	0.07	0.06	42,234,588,929	44,938,643,801	39,183,222,628
7	0.11	0.11	0.11	76,806,141,926	75,577,733,002	77,001,987,956
8	0.14	0.14	0.14	92,044,321,207	91,526,588,069	93,165,602,472
9	0.05	0.05	0.05	33,694,058,999	34,157,078,577	35,282,042,991
10	0.01	0.01	0.01	3,842,919,956	3,704,604,417	3,694,933,743
11	0.01	0.01	0.01	5,490,677,464	5,367,081,305	5,514,435,086
12	0.01	0.01	0.00	4,200,164,769	4,143,551,773	3,224,854,993
13	0.02	0.02	0.02	10,491,231,920	10,360,761,318	10,589,830,187
14	0.01	0.01	0.00	4,025,477,463	4,186,069,185	420,142,643
15	0.00	0.00	0.00	2,503,414,325	2,498,111,718	2,502,074,462
16	0.01	0.01	0.01	5,691,461,399	5,354,945,803	5,376,004,238
17	0.00	0.00	0.00	2,015,031,187	2,014,735,675	2,035,298,207
18	0.01	0.00	0.01	3,404,562,294	3,273,051,048	3,368,231,631
19	0.01	0.01	0.01	7,474,852,925	7,393,257,622	7,573,860,157
LTS	0.51	0.51	0.52	342,635,094,114	343,006,770,221	348,067,758,328
<i>Total</i>	<i>1.00</i>	<i>1.00</i>	<i>1.00</i>	<u>672,662,000,000</u>	<u>672,662,000,000</u>	<u>672,662,000,000</u>
Add: Special Taxes						
Excise Tax					58,720,000,000	
Tax on T-Bills					30,391,000,000	
Stock Transaction Tax					3,575,000,000	
Travel Tax					510,000,000	
Overall Goal					<u>765,858,000,000</u>	

## Simulation #11: Methodology Application to CY 2007 (Using CY 2002-06 Data), District

### ➤ Adjustment Tables

Revenue		Predicted From Regression					Adjusted Collection (Pred +/- 10%MoAve Band)				
Region	RDO	CY 2002	CY 2003	CY 2004	CY 2005	CY 2006	CY 2002	CY 2003	CY 2004	CY 2005	CY 2006
1	1	431.0	431.2	431.4	431.6	431.8	427.4	427.6	435.0	435.2	435.4
	2	487.5	487.7	488.0	488.2	488.5	483.4	483.7	483.9	492.3	492.5
	3	676.6	676.9	677.3	677.6	677.9	671.0	671.3	671.6	683.3	683.6
	4	736.7	737.1	737.4	737.8	738.2	730.6	730.9	731.3	743.9	744.3
	5	980.7	981.2	981.7	982.2	982.7	972.5	973.0	973.5	990.4	990.8
	6	549.3	549.6	549.9	550.2	550.4	544.8	545.0	554.5	554.8	555.0
2	7	82.6	82.7	82.7	82.7	82.8	81.9	82.0	83.4	83.4	83.5
	8	1,680.9	1,681.7	1,682.6	1,683.4	1,684.2	1,666.9	1,667.7	1,668.5	1,697.4	1,698.3
	9	338.5	338.6	338.8	339.0	339.2	341.3	335.8	341.6	336.2	342.0
	10	70.0	70.1	70.1	70.2	70.2	69.5	69.5	69.5	70.7	70.8
	11	124.6	124.6	124.7	124.7	124.8	123.5	123.6	123.6	125.8	125.9
	12	67.6	67.6	67.7	67.7	67.7	67.0	67.1	67.1	68.3	68.3
3	13	656.8	657.1	657.4	657.8	658.1	651.3	662.3	652.0	652.3	663.6
	14	212.3	212.4	212.5	212.6	212.7	210.5	210.7	210.8	214.4	214.5
	15	594.5	594.8	595.1	595.4	595.7	589.5	589.8	590.1	600.3	600.6
	16	59.9	59.9	59.9	60.0	60.0	59.4	59.4	59.4	60.5	60.5
4	17	1,075.1	1,075.7	1,076.2	1,076.8	1,077.3	1,066.2	1,066.7	1,067.2	1,085.7	1,086.3
	18	443.9	444.1	444.3	444.5	444.8	440.2	440.4	440.6	448.2	448.5
	19	825.3	825.7	826.1	826.5	827.0	818.4	818.8	819.3	833.4	833.9
	20	680.3	680.7	681.0	681.4	681.7	674.7	675.0	675.4	687.0	687.4
	21	2,924.5	2,926.0	2,927.5	2,928.9	2,930.4	2,900.2	2,901.6	2,903.1	2,953.3	2,954.8
	22	83.4	83.4	83.5	83.5	83.5	82.7	82.7	82.8	84.2	84.2
	23	840.4	840.8	841.2	841.7	842.1	833.4	833.8	834.2	848.7	849.1
5	24	1,502.4	1,503.2	1,503.9	1,504.7	1,505.4	1,489.9	1,490.7	1,491.4	1,517.2	1,518.0
	25	2,370.4	2,371.6	2,372.8	2,373.9	2,375.1	2,350.6	2,351.8	2,353.0	2,393.7	2,394.9
	26	1,332.4	1,333.1	1,333.8	1,334.4	1,335.1	1,321.3	1,322.0	1,322.6	1,345.5	1,346.2
	27	2,099.2	2,100.2	2,101.3	2,102.3	2,103.4	2,081.7	2,082.7	2,083.8	2,119.9	2,120.9
6	29	1,390.5	1,391.2	1,391.9	1,392.6	1,393.2	1,378.9	1,379.6	1,403.5	1,404.2	1,404.9
	30	1,405.9	1,406.6	1,407.4	1,408.1	1,408.8	1,417.7	1,394.9	1,395.6	1,419.8	1,420.5
	31	955.4	955.8	956.3	956.8	957.3	947.4	947.9	948.3	964.8	965.2
	32	1,934.3	1,935.2	1,936.2	1,937.2	1,938.1	1,918.2	1,919.1	1,920.1	1,953.3	1,954.3
	33	17,732.3	17,741.2	17,750.0	17,758.9	17,767.7	17,584.5	17,880.1	17,602.1	17,906.9	17,915.8
	34	1,858.9	1,859.9	1,860.8	1,861.7	1,862.6	1,843.4	1,844.4	1,845.3	1,877.2	1,878.2
	35	90.9	90.9	91.0	91.0	91.1	90.1	90.2	90.2	91.8	91.8
	36	459.5	459.7	459.9	460.2	460.4	455.7	455.9	456.1	464.0	464.2
	37	139.1	139.2	139.2	139.3	139.4	137.9	138.0	138.1	140.5	140.5
	7	28	1,264.2	1,264.8	1,265.4	1,266.1	1,266.7	1,253.6	1,254.3	1,254.9	1,276.6
38		4,390.2	4,392.4	4,394.6	4,396.8	4,399.0	4,353.6	4,355.8	4,358.0	4,433.4	4,435.6
39		10,969.0	10,974.5	10,980.0	10,985.5	10,990.9	10,877.6	10,883.1	10,888.5	10,893.9	11,082.5

## Simulation #11: Prospective Application to CY 2007 (Using CY 2002-06 Data), District

### ➤ Adjustment Table ... continued

Revenue		Predicted From Regression					Adjusted Collection (Pred +/- 10%MoAve Band)				
Region	RDO	CY 2002	CY 2003	CY 2004	CY 2005	CY 2006	CY 2002	CY 2003	CY 2004	CY 2005	CY 2006
	40	6,614.4	6,617.7	6,621.0	6,624.3	6,627.6	6,559.2	6,562.5	6,565.8	6,679.5	6,682.8
	41	5,436.2	5,438.9	5,441.7	5,444.4	5,447.1	5,390.9	5,393.6	5,396.3	5,489.7	5,492.5
	42	1,684.5	1,685.4	1,686.2	1,687.1	1,687.9	1,670.5	1,671.3	1,672.2	1,701.1	1,702.0
	43	11,861.4	11,867.3	11,873.2	11,879.2	11,885.1	11,762.5	11,768.4	11,774.3	11,978.1	11,984.1
	45	1,619.5	1,620.3	1,621.1	1,621.9	1,622.7	1,606.0	1,606.8	1,607.6	1,635.4	1,636.2
	46	1,481.3	1,482.1	1,482.8	1,483.6	1,484.3	1,469.0	1,469.7	1,470.5	1,495.9	1,496.7
8	44	3,769.7	3,771.6	3,773.5	3,775.4	3,777.3	3,738.3	3,740.2	3,742.1	3,743.9	3,808.8
	47	10,230.9	10,236.0	10,241.1	10,246.3	10,251.4	10,145.7	10,150.7	10,155.8	10,331.6	10,336.8
	48	4,289.4	4,291.5	4,293.7	4,295.8	4,297.9	4,253.6	4,255.7	4,257.9	4,260.0	4,333.8
	49	5,207.8	5,210.4	5,213.0	5,215.6	5,218.2	5,164.4	5,167.0	5,169.5	5,259.0	5,261.7
	50	12,603.2	12,609.5	12,615.8	12,622.1	12,628.3	12,498.1	12,504.4	12,510.6	12,727.2	12,733.6
	51	3,913.6	3,915.5	3,917.5	3,919.4	3,921.4	3,880.9	3,882.9	3,884.8	3,952.1	3,954.1
	52	4,232.7	4,234.8	4,236.9	4,239.0	4,241.2	4,197.4	4,199.5	4,201.6	4,274.4	4,276.5
	53	8,570.2	8,574.5	8,578.8	8,583.1	8,587.3	8,498.8	8,503.0	8,507.3	8,511.5	8,658.9
9	54	5,709.7	5,712.6	5,715.4	5,718.3	5,721.1	5,662.1	5,664.9	5,667.8	5,765.9	5,768.8
	55	848.6	849.0	849.4	849.9	850.3	855.7	841.9	842.4	857.0	857.4
	56	3,554.2	3,556.0	3,557.8	3,559.5	3,561.3	3,524.6	3,526.4	3,528.1	3,589.2	3,591.0
	57	4,824.8	4,827.2	4,829.6	4,832.0	4,834.4	4,784.6	4,787.0	4,845.5	4,872.3	4,874.7
	58	1,359.4	1,360.1	1,360.8	1,361.4	1,362.1	1,370.7	1,348.7	1,349.4	1,368.7	1,373.5
	59	1,450.9	1,451.6	1,452.4	1,453.1	1,453.8	1,438.8	1,439.5	1,440.3	1,465.2	1,465.9
	60	3,070.2	3,071.7	3,073.3	3,074.8	3,076.3	3,044.6	3,095.8	3,098.9	3,100.4	3,102.0
	61	124.6	124.6	124.7	124.8	124.8	123.5	123.6	124.7	125.8	125.9
	62	65.4	65.5	65.5	65.5	65.6	64.9	64.9	65.0	66.1	66.1
	63	247.3	247.5	247.6	247.7	247.8	245.3	245.4	245.5	249.8	249.9
10	64	233.7	233.8	233.9	234.0	234.2	231.7	231.9	232.0	236.0	236.1
	65	573.0	573.3	573.6	573.9	574.2	568.2	568.5	568.8	578.7	578.9
	66	161.1	161.2	161.2	161.3	161.4	159.7	159.8	159.9	162.7	162.7
	67	954.7	955.2	955.6	956.1	956.6	962.6	962.6	947.7	948.1	964.6
	68	172.8	172.9	173.0	173.1	173.2	171.4	171.5	171.5	174.5	174.6
	69	90.4	90.5	90.5	90.6	90.6	89.7	89.7	89.8	91.3	91.4
	70	149.5	149.5	149.6	149.7	149.8	148.2	148.3	148.4	150.9	151.0
11	71	268.0	268.1	268.2	268.4	268.5	265.7	265.9	266.0	270.6	270.7
	72	265.0	265.2	265.3	265.4	265.5	262.8	262.9	263.1	267.6	267.8
	73	250.9	251.0	251.1	251.2	251.4	248.8	248.9	249.0	249.1	253.5
	74	2,298.6	2,299.7	2,300.9	2,302.0	2,303.2	2,279.4	2,280.5	2,315.8	2,321.2	2,322.3
	75	263.5	263.7	263.8	263.9	264.1	261.3	261.5	264.1	266.1	266.3
12	76	490.3	490.5	490.8	491.0	491.3	486.2	486.4	494.9	495.1	495.3
	77	1,276.0	1,276.6	1,277.3	1,277.9	1,278.5	1,265.4	1,266.0	1,266.6	1,288.6	1,289.2
	78	245.5	245.6	245.7	245.8	246.0	243.4	243.5	243.7	247.9	248.0
	79	654.9	655.2	655.5	655.9	656.2	649.4	649.7	650.1	661.3	661.6

## Simulation #11: Prospective Application to CY 2007 (Using CY 2002-06 Data), District

### ➤ Adjustment Tables ... continued

Revenue		Predicted From Regression					Adjusted Collection (Pred +/- 10%MoAve Band)				
Region	RDO	CY 2002	CY 2003	CY 2004	CY 2005	CY 2006	CY 2002	CY 2003	CY 2004	CY 2005	CY 2006
13	80	1,893.1	1,894.1	1,895.0	1,896.0	1,896.9	1,877.3	1,878.3	1,879.2	1,911.7	1,912.7
	81	2,438.7	2,439.9	2,441.2	2,442.4	2,443.6	2,418.4	2,419.6	2,420.8	2,462.7	2,464.0
	82	769.7	770.1	770.4	770.8	771.2	763.3	763.6	764.0	777.3	777.6
	83	716.1	716.4	716.8	717.1	717.5	710.1	710.5	722.8	711.2	723.5
	84	500.7	501.0	501.2	501.5	501.7	496.5	496.8	497.0	505.6	505.9
14	85	143.3	143.4	143.4	143.5	143.6	142.1	142.2	144.6	144.7	144.8
	86	130.0	130.1	130.1	130.2	130.3	128.9	129.0	129.1	131.3	131.4
	87	198.8	198.9	199.0	199.1	199.2	197.2	197.3	197.4	200.8	200.9
	88	849.2	849.6	850.0	850.5	850.9	851.5	842.5	857.1	843.4	858.0
	89	1,190.3	1,190.9	1,191.5	1,192.1	1,192.7	1,180.4	1,181.0	1,201.4	1,202.0	1,202.6
	90	158.4	158.5	158.5	158.6	158.7	157.1	157.1	157.2	159.9	160.0
15	91	275.7	275.8	275.9	276.1	276.2	273.4	273.5	273.6	278.4	278.5
	92	264.7	264.8	265.0	265.1	265.2	262.5	262.6	262.7	267.3	267.4
	93	902.9	903.4	903.8	904.3	904.7	895.4	895.9	911.4	896.8	912.3
	94	55.3	55.4	55.4	55.4	55.4	54.9	54.9	55.8	55.9	55.9
	95	31.8	31.9	31.9	31.9	31.9	31.6	31.6	31.6	31.6	32.2
	96	24.0	24.0	24.0	24.0	24.1	23.8	23.8	24.2	24.2	24.3
16	97	122.5	122.6	122.6	122.7	122.7	121.5	121.5	121.6	123.7	123.8
	98	2,026.0	2,027.0	2,028.0	2,029.0	2,030.1	2,009.1	2,010.1	2,011.1	2,046.0	2,047.0
	99	439.0	439.2	439.4	439.6	439.9	442.6	435.5	435.8	436.0	443.5
	100	241.3	241.4	241.5	241.6	241.8	239.3	239.4	239.5	243.7	243.8
	101	501.3	501.6	501.8	502.1	502.3	497.2	497.4	497.6	506.3	506.5
	102	119.3	119.4	119.4	119.5	119.6	118.3	118.4	118.5	120.5	120.6
17	103	513.2	513.5	513.7	514.0	514.3	509.0	509.2	509.5	518.3	518.5
	104	237.4	237.5	237.7	237.8	237.9	235.5	235.6	239.6	239.8	239.9
	105	268.3	268.4	268.6	268.7	268.8	266.1	266.2	266.3	271.0	271.1
	106	239.2	239.3	239.4	239.5	239.7	237.2	237.3	241.4	241.5	241.7
18	107	640.3	640.6	641.0	641.3	641.6	635.0	635.3	641.9	646.6	646.9
	108	288.7	288.9	289.0	289.2	289.3	291.1	286.5	286.6	286.7	291.7
	109	133.2	133.2	133.3	133.4	133.4	132.1	132.1	134.4	134.5	134.6
	110	592.9	593.1	593.4	593.7	594.0	587.9	588.2	588.5	598.7	599.0
	111	420.1	420.3	420.5	420.7	420.9	416.6	416.8	417.0	424.2	424.4
19	112	826.0	826.4	826.8	827.2	827.6	819.1	819.5	819.9	834.1	834.5
	113	3,312.0	3,313.7	3,315.3	3,317.0	3,318.7	3,284.4	3,286.1	3,287.7	3,344.6	3,346.3
	114	138.1	138.2	138.2	138.3	138.4	136.9	137.0	139.4	139.5	139.5
	115	268.6	268.7	268.9	269.0	269.1	266.3	266.5	271.1	271.2	271.4
LTS	LTS	153,280.0	153,360.0	153,430.0	153,510.0	153,590.0	152,002.7	152,082.0	152,151.4	154,789.3	154,869.9
	EXCISE	35,942.2	35,960.1	35,978.1	35,996.0	36,014.0	35,642.7	35,660.5	35,678.3	36,296.0	36,314.1
	LTDO-MKTI	12,540.4	12,546.7	12,552.9	12,559.2	12,565.5	12,435.9	12,442.1	12,448.3	12,454.5	12,670.2
	LTDO-CEBU	6,376.6	6,379.8	6,383.0	6,386.2	6,389.4	6,323.5	6,326.7	6,329.8	6,439.4	6,442.6
Total		405,644.1	405,850.2	406,046.3	406,252.3	406,458.4	402,367.1	402,830.6	402,950.3	408,873.0	409,845.5

## Simulation #11: Prospective Application to CY 2007 (Using CY 2002-06 Data), District

### ➤ Allocation Coefficient Derivation

Revenue		Share				Allocation Coeff. (C2G for Region, Share of District)			
Region	RDO	Ave CY 2002-06	Ave CY 2003-06	Ave CY 2004-06	Ave CY 2005-06	Ave CY 2002-06	Ave CY 2003-06	Ave CY 2004-06	Ave CY 2005-6
1	1	0.1066	0.1067	0.1069	0.1063	0.1119	0.1119	0.1121	0.1116
	2	0.1202	0.1202	0.1202	0.1203	0.1261	0.1261	0.1261	0.1262
	3	0.1668	0.1668	0.1669	0.1669	0.1751	0.1750	0.1750	0.1752
	4	0.1816	0.1816	0.1817	0.1818	0.1906	0.1906	0.1905	0.1908
	5	0.2418	0.2418	0.2419	0.2420	0.2537	0.2537	0.2536	0.2540
	6	0.1359	0.1360	0.1362	0.1356	0.1426	0.1427	0.1428	0.1423
2	7	0.0204	0.0205	0.0205	0.0204	0.0350	0.0351	0.0351	0.0350
	8	0.4144	0.4144	0.4145	0.4148	0.7105	0.7109	0.7108	0.7118
	9	0.0837	0.0835	0.0835	0.0828	0.1436	0.1432	0.1432	0.1422
	10	0.0173	0.0173	0.0173	0.0173	0.0296	0.0296	0.0296	0.0297
	11	0.0307	0.0307	0.0307	0.0307	0.0527	0.0527	0.0527	0.0527
	12	0.0167	0.0167	0.0167	0.0167	0.0286	0.0286	0.0286	0.0286
3	13	0.1619	0.1619	0.1611	0.1607	0.4311	0.4311	0.4298	0.4291
	14	0.0523	0.0523	0.0524	0.0524	0.1394	0.1394	0.1397	0.1399
	15	0.1466	0.1466	0.1466	0.1467	0.3902	0.3902	0.3912	0.3916
	16	0.0148	0.0148	0.0148	0.0148	0.0393	0.0393	0.0394	0.0394
4	17	0.2650	0.2651	0.2651	0.2653	0.1564	0.1564	0.1564	0.1564
	18	0.1094	0.1094	0.1095	0.1095	0.0646	0.0646	0.0646	0.0646
	19	0.2035	0.2035	0.2035	0.2036	0.1201	0.1201	0.1201	0.1201
	20	0.1677	0.1677	0.1678	0.1679	0.0990	0.0990	0.0990	0.0990
	21	0.7210	0.7210	0.7212	0.7216	0.4255	0.4255	0.4255	0.4255
	22	0.0206	0.0206	0.0206	0.0206	0.0121	0.0121	0.0121	0.0121
	23	0.2072	0.2072	0.2073	0.2074	0.1223	0.1223	0.1223	0.1223
	24	0.3704	0.3704	0.3705	0.3707	0.2057	0.2057	0.2057	0.2057
5	25	0.5844	0.5844	0.5846	0.5849	0.3245	0.3245	0.3245	0.3245
	26	0.3285	0.3285	0.3286	0.3288	0.1824	0.1824	0.1824	0.1824
	27	0.5175	0.5175	0.5177	0.5180	0.2874	0.2874	0.2874	0.2874
	28	0.3116	0.3117	0.3118	0.3119	0.0279	0.0279	0.0279	0.0279
6	30	0.3478	0.3466	0.3467	0.3469	0.0542	0.0540	0.0541	0.0541
	31	0.2355	0.2355	0.2356	0.2357	0.0367	0.0367	0.0368	0.0368
	32	0.4768	0.4769	0.4770	0.4773	0.0743	0.0743	0.0745	0.0745
	33	4.3856	4.3895	4.3731	4.3755	0.6833	0.6836	0.6827	0.6829
	34	0.4583	0.4583	0.4584	0.4587	0.0714	0.0714	0.0716	0.0716
	35	0.0224	0.0224	0.0224	0.0224	0.0035	0.0035	0.0035	0.0035
	36	0.1133	0.1133	0.1133	0.1134	0.0176	0.0176	0.0177	0.0177
	37	0.0343	0.0343	0.0343	0.0343	0.0053	0.0053	0.0054	0.0054
	38	1.0823	1.0823	1.0827	1.0833	0.0969	0.0970	0.0970	0.0971
	39	2.6951	2.6931	2.6902	2.6842	0.2414	0.2413	0.2410	0.2405
7	40	1.6306	1.6307	1.6312	1.6321	0.1461	0.1461	0.1461	0.1462

## Simulation #11: Prospective Application to CY 2007 (Using CY 2002-06 Data), District

### ➤ Allocation Coefficient Derivation

Revenue		Share				Allocation Coeff. (C2G for Region, Share of District)			
Region	RDO	Ave CY 2002-06	Ave CY 2003-06	Ave CY 2004-06	Ave CY 2005-06	Ave CY 2002-06	Ave CY 2003-06	Ave CY 2004-06	Ave CY 2005-6
	41	1.3401	1.3402	1.3407	1.3414	0.1200	0.1201	0.1201	0.1202
	42	0.4153	0.4153	0.4154	0.4157	0.0372	0.0372	0.0372	0.0372
	43	2.9241	2.9243	2.9252	2.9268	0.2619	0.2620	0.2621	0.2622
	45	0.3992	0.3993	0.3994	0.3996	0.0358	0.0358	0.0358	0.0358
	46	0.3652	0.3652	0.3653	0.3655	0.0327	0.0327	0.0327	0.0328
8	44	0.9262	0.9255	0.9246	0.9225	0.0712	0.0712	0.0711	0.0710
	47	2.5221	2.5223	2.5231	2.5245	0.1939	0.1940	0.1940	0.1942
	48	1.0539	1.0531	1.0520	1.0496	0.0810	0.0810	0.0809	0.0807
	49	1.2838	1.2839	1.2843	1.2850	0.0987	0.0987	0.0988	0.0989
	50	3.1069	3.1071	3.1081	3.1098	0.2389	0.2389	0.2390	0.2392
	51	0.9648	0.9648	0.9651	0.9657	0.0742	0.0742	0.0742	0.0743
	52	1.0434	1.0435	1.0439	1.0444	0.0802	0.0802	0.0803	0.0803
	53	2.1057	2.1041	2.1019	2.0972	0.1619	0.1618	0.1616	0.1613
9	54	1.4076	1.4077	1.4081	1.4089	0.2681	0.2681	0.2682	0.2687
	55	0.2099	0.2092	0.2093	0.2094	0.0400	0.0399	0.0399	0.0399
	56	0.8762	0.8762	0.8765	0.8770	0.1669	0.1669	0.1669	0.1672
	57	1.1922	1.1930	1.1945	1.1905	0.2271	0.2272	0.2275	0.2270
	58	0.3360	0.3349	0.3349	0.3349	0.0640	0.0638	0.0638	0.0639
	59	0.3577	0.3577	0.3578	0.3580	0.0681	0.0681	0.0681	0.0683
	60	0.7619	0.7632	0.7614	0.7576	0.1451	0.1454	0.1450	0.1445
	61	0.0308	0.0308	0.0308	0.0307	0.0059	0.0059	0.0059	0.0059
	62	0.0161	0.0161	0.0161	0.0161	0.0031	0.0031	0.0031	0.0031
	63	0.0610	0.0610	0.0610	0.0610	0.0116	0.0116	0.0116	0.0116
10	64	0.0576	0.0576	0.0576	0.0577	0.0999	0.1001	0.1003	0.1004
	65	0.1413	0.1413	0.1413	0.1414	0.2451	0.2454	0.2459	0.2462
	66	0.0397	0.0397	0.0397	0.0397	0.0689	0.0690	0.0691	0.0692
	67	0.2361	0.2353	0.2341	0.2336	0.4096	0.4088	0.4075	0.4068
	68	0.0426	0.0426	0.0426	0.0426	0.0739	0.0740	0.0742	0.0743
	69	0.0223	0.0223	0.0223	0.0223	0.0387	0.0387	0.0388	0.0389
	70	0.0368	0.0368	0.0369	0.0369	0.0639	0.0640	0.0641	0.0642
11	71	0.0661	0.0661	0.0661	0.0661	0.0799	0.0799	0.0798	0.0801
	72	0.0653	0.0653	0.0654	0.0654	0.0791	0.0790	0.0789	0.0793
	73	0.0616	0.0616	0.0615	0.0614	0.0746	0.0745	0.0743	0.0744
	74	0.5683	0.5688	0.5697	0.5672	0.6877	0.6879	0.6881	0.6874
	75	0.0651	0.0651	0.0652	0.0650	0.0788	0.0788	0.0788	0.0788
12	76	0.1213	0.1214	0.1216	0.1210	0.1844	0.1845	0.1847	0.1839
	77	0.3146	0.3146	0.3147	0.3149	0.4782	0.4781	0.4780	0.4785
	78	0.0605	0.0605	0.0605	0.0606	0.0920	0.0920	0.0920	0.0921
	79	0.1614	0.1614	0.1615	0.1616	0.2454	0.2454	0.2453	0.2456
13	80	0.4667	0.4667	0.4669	0.4671	0.2996	0.2996	0.2996	0.2999
	81	0.6012	0.6012	0.6014	0.6018	0.3860	0.3860	0.3860	0.3863
	82	0.1897	0.1898	0.1898	0.1899	0.1218	0.1218	0.1218	0.1219
	83	0.1765	0.1765	0.1766	0.1752	0.1133	0.1133	0.1133	0.1125
	84	0.1234	0.1234	0.1235	0.1235	0.0792	0.0792	0.0792	0.0793

## Simulation #11: Prospective Application to CY 2007 (Using CY 2002-06 Data), District

### ➤ Allocation Coefficient Derivation

Revenue		Share				Allocation Coeff. (C2G for Region, Share of District)			
Region	RDO	Ave CY 2002-06	Ave CY 2003-06	Ave CY 2004-06	Ave CY 2005-06	Ave CY 2002-06	Ave CY 2003-06	Ave CY 2004-06	Ave CY 2005-6
14	85	0.0354	0.0355	0.0355	0.0354	0.0537	0.0538	0.0538	0.0538
	86	0.0321	0.0321	0.0321	0.0321	0.0486	0.0486	0.0486	0.0488
	87	0.0490	0.0490	0.0490	0.0491	0.0743	0.0743	0.0743	0.0747
	88	0.2098	0.2094	0.2094	0.2078	0.3180	0.3174	0.3172	0.3163
	89	0.2944	0.2947	0.2952	0.2937	0.4462	0.4467	0.4470	0.4470
	90	0.0390	0.0390	0.0391	0.0391	0.0592	0.0592	0.0592	0.0595
15	91	0.0680	0.0680	0.0680	0.0680	0.1773	0.1773	0.1773	0.1782
	92	0.0653	0.0653	0.0653	0.0653	0.1703	0.1702	0.1702	0.1711
	93	0.2226	0.2226	0.2227	0.2210	0.5808	0.5808	0.5808	0.5789
	94	0.0137	0.0137	0.0137	0.0137	0.0357	0.0357	0.0358	0.0358
	95	0.0078	0.0078	0.0078	0.0078	0.0204	0.0204	0.0204	0.0204
	96	0.0059	0.0059	0.0060	0.0059	0.0155	0.0155	0.0155	0.0155
16	97	0.0302	0.0302	0.0302	0.0302	0.0355	0.0355	0.0355	0.0355
	98	0.4995	0.4995	0.4996	0.4999	0.5873	0.5877	0.5878	0.5880
	99	0.1082	0.1078	0.1077	0.1074	0.1273	0.1268	0.1266	0.1263
	100	0.0595	0.0595	0.0595	0.0595	0.0699	0.0700	0.0700	0.0700
	101	0.1236	0.1236	0.1236	0.1237	0.1453	0.1454	0.1454	0.1455
	102	0.0294	0.0294	0.0294	0.0294	0.0346	0.0346	0.0346	0.0346
17	103	0.1265	0.1265	0.1266	0.1266	0.4074	0.4073	0.4071	0.4079
	104	0.0587	0.0588	0.0589	0.0586	0.1891	0.1892	0.1894	0.1887
	105	0.0661	0.0661	0.0662	0.0662	0.2130	0.2129	0.2128	0.2133
	106	0.0592	0.0592	0.0593	0.0590	0.1905	0.1906	0.1908	0.1901
18	107	0.1582	0.1583	0.1584	0.1580	0.3089	0.3092	0.3094	0.3089
	108	0.0712	0.0709	0.0708	0.0707	0.1390	0.1385	0.1383	0.1381
	109	0.0329	0.0330	0.0330	0.0329	0.0643	0.0644	0.0645	0.0643
	110	0.1462	0.1462	0.1462	0.1463	0.2855	0.2856	0.2855	0.2860
	111	0.1036	0.1036	0.1036	0.1037	0.2023	0.2023	0.2023	0.2027
19	112	0.2036	0.2036	0.2037	0.2038	0.1817	0.1817	0.1817	0.1817
	113	0.8165	0.8165	0.8168	0.8172	0.7285	0.7285	0.7284	0.7288
	114	0.0342	0.0342	0.0342	0.0341	0.0305	0.0305	0.0305	0.0304
	115	0.0664	0.0665	0.0666	0.0663	0.0593	0.0593	0.0594	0.0591
LTS	LTS	37.7869	37.7894	37.8014	37.8225	0.7366	0.7366	0.7367	0.7368
	EXCISE	8.8605	8.8611	8.8639	8.8688	0.1727	0.1727	0.1727	0.1728
	LTDO-MKTI	3.0812	3.0789	3.0756	3.0688	0.0601	0.0600	0.0599	0.0598
	LTDO-CERU	1.5720	1.5721	1.5726	1.5734	0.0306	0.0306	0.0306	0.0307
Total		100	100	100	100	(total per region sums up to 1.0)			

## Simulation #11: Prospective Application to CY 2007 (Using CY 2002-06 Data), District

### ➤ Comparative Allocations

Region	Revenue	Alternative Methodology (C2G for RR, District Share in Region for RDO)				
	RDO	Ave CY 2002-06	Ave CY 2003-06	Ave CY 2004-06	Ave CY 2005-06	
1	1	762,805,827	763,281,526	764,073,085	760,900,397	
	2	860,006,733	859,823,662	859,519,034	860,740,030	
	3	1,193,589,748	1,193,335,667	1,192,912,878	1,194,607,479	
	4	1,299,619,789	1,299,343,137	1,298,882,791	1,300,727,928	
	5	1,730,080,489	1,729,712,204	1,729,099,382	1,731,555,667	
	6	972,373,765	972,980,154	973,989,181	969,944,850	
2	7	124,588,760	124,749,115	124,916,294	124,394,147	
	8	2,526,085,978	2,527,222,784	2,527,092,288	2,530,611,921	
	9	510,410,787	508,936,289	508,919,963	505,373,429	
	10	105,268,967	105,316,341	105,310,903	105,457,575	
	11	187,195,224	187,279,467	187,269,796	187,530,618	
	12	101,595,204	101,640,924	101,635,676	101,777,230	
3	13	1,052,688,838	1,052,680,589	1,049,409,427	1,047,750,008	
	14	340,322,856	340,324,877	341,126,235	341,532,753	
	15	952,904,219	952,909,877	955,153,679	956,291,931	
	16	95,979,419	95,979,989	96,205,991	96,320,639	
4	17	1,770,384,956	1,770,384,956	1,770,384,956	1,770,384,956	
	18	730,910,635	730,910,635	730,910,635	730,910,635	
	19	1,359,005,917	1,359,005,917	1,359,005,917	1,359,005,917	
	20	1,120,296,760	1,120,296,760	1,120,296,760	1,120,296,760	
	21	4,815,714,341	4,815,714,341	4,815,714,341	4,815,714,341	
	22	137,294,717	137,294,717	137,294,717	137,294,717	
	23	1,383,857,475	1,383,857,475	1,383,857,475	1,383,857,475	
	24	2,463,105,721	2,463,105,721	2,463,105,721	2,463,105,721	
5	25	3,886,052,009	3,886,052,009	3,886,052,009	3,886,052,008	
	26	2,184,404,347	2,184,404,347	2,184,404,347	2,184,404,348	
	27	3,441,457,644	3,441,457,644	3,441,457,644	3,441,457,644	
	28	2,263,322,959	2,264,270,684	2,273,553,841	2,261,579,046	
6	30	2,288,520,739	2,279,903,495	2,286,068,919	2,286,753,966	
	31	1,549,873,807	1,549,226,602	1,553,416,094	1,553,881,593	
	32	3,137,970,382	3,136,660,010	3,145,142,315	3,146,084,794	
	33	28,860,660,784	28,872,014,277	28,832,718,561	28,841,358,625	
	34	3,015,725,520	3,014,466,196	3,022,618,058	3,023,523,822	
	35	147,434,010	147,372,444	147,770,976	147,815,257	
	36	745,426,967	745,115,688	747,130,665	747,354,551	
	37	225,653,761	225,559,532	226,169,500	226,237,275	
	7	38	2,144,124,230	2,144,554,207	2,145,270,473	2,146,703,487
		39	7,446,175,386	7,447,668,622	7,450,156,093	7,455,132,704
40		18,542,767,108	18,531,083,133	18,511,619,657	18,472,679,644	
41		11,218,514,668	11,220,764,398	11,224,512,057	11,232,009,891	

## Simulation #11: Prospective Application to CY 2007 (Using CY 2002-06 Data), District

### ➤ Comparative Allocations

Region	Revenue RDO	Alternative Methodology (C2G for RR, District Share in Region for RDO)			
		Ave CY 2002-06	Ave CY 2003-06	Ave CY 2004-06	Ave CY 2005-06
	41	9,220,287,730	9,222,136,741	9,225,216,872	9,231,379,202
	42	2,857,117,153	2,857,690,111	2,858,644,561	2,860,554,100
	43	20,117,894,518	20,121,928,905	20,128,649,493	20,142,095,179
	45	2,746,778,143	2,747,328,974	2,748,246,563	2,750,082,358
	46	2,512,482,989	2,512,986,836	2,513,826,156	2,515,505,361
8	44	6,554,563,691	6,550,829,228	6,544,607,259	6,532,155,386
	47	17,847,915,742	17,852,573,101	17,860,332,702	17,875,861,800
	48	7,458,044,306	7,453,795,085	7,446,715,480	7,432,547,242
	49	9,085,007,958	9,087,378,663	9,091,328,482	9,099,233,157
	50	21,986,306,855	21,992,044,114	22,001,602,932	22,020,732,757
	51	6,827,235,849	6,829,017,396	6,831,985,621	6,837,925,856
	52	7,383,961,864	7,385,888,686	7,389,098,954	7,395,523,585
	53	14,901,284,943	14,892,794,935	14,878,649,777	14,850,341,424
9	54	9,034,779,943	9,034,641,257	9,036,237,256	9,051,977,867
	55	1,347,296,027	1,342,763,006	1,343,000,209	1,345,339,639
	56	5,624,039,615	5,623,953,284	5,624,946,774	5,634,745,112
	57	7,652,410,679	7,656,761,183	7,665,553,978	7,649,065,354
	58	2,156,998,049	2,149,413,640	2,149,255,819	2,151,923,501
	59	2,295,871,638	2,295,836,396	2,296,241,963	2,300,241,886
	60	4,890,302,813	4,898,260,271	4,886,136,909	4,867,409,619
	61	197,459,197	197,536,521	197,705,226	197,512,928
	62	103,542,490	103,540,901	103,559,192	103,739,586
	63	391,358,547	391,352,540	391,421,674	392,103,508
10	64	384,055,815	384,585,638	385,444,318	385,879,835
	65	941,723,459	943,022,611	945,128,135	946,196,044
	66	264,717,187	265,082,377	265,674,237	265,974,425
	67	1,574,176,666	1,571,046,828	1,565,974,327	1,563,401,585
	68	284,020,100	284,411,919	285,046,937	285,369,014
	69	148,594,204	148,799,197	149,131,427	149,299,932
	70	245,632,524	245,971,386	246,520,576	246,799,122
11	71	438,879,563	438,665,228	438,308,837	440,012,179
	72	434,044,635	433,832,661	433,480,196	435,164,774
	73	409,501,474	408,961,569	408,063,831	408,515,037
	74	3,775,802,053	3,776,769,764	3,778,378,846	3,774,261,349
	75	432,449,739	432,448,242	432,445,753	432,724,126
12	76	774,345,768	774,874,114	775,753,416	772,230,079
	77	2,008,569,614	2,008,259,843	2,007,744,306	2,009,810,051
	78	386,398,672	386,339,080	386,239,903	386,637,301
	79	1,030,850,714	1,030,691,731	1,030,427,144	1,031,487,339
13	80	3,143,414,785	3,143,410,600	3,143,403,632	3,146,381,311
	81	4,049,361,364	4,049,355,973	4,049,346,997	4,053,182,856
	82	1,278,011,429	1,278,009,727	1,278,006,894	1,279,217,523
	83	1,189,052,081	1,189,064,466	1,189,085,085	1,180,273,361
	84	831,392,261	831,391,154	831,389,311	832,176,868

## Simulation #11: Prospective Application to CY 2007 (Using CY 2002-06 Data), District

### ➤ Comparative Allocations

Region	Revenue		Alternative Methodology ((C2G for RR, District Share in Region for RDO)			
	RDO		Ave CY 2002-06	Ave CY 2003-06	Ave CY 2004-06	Ave CY 2005-06
14	85		216,235,860	216,478,452	216,627,500	216,599,335
	86		195,553,279	195,609,008	195,471,623	196,539,951
	87		299,027,617	299,112,834	298,902,754	300,536,373
	88		1,280,140,036	1,277,673,358	1,276,800,962	1,273,059,778
	89		1,796,309,690	1,798,324,94	1,799,563,111	1,799,329,140
	90		238,210,981	238,278,867	238,111,513	239,412,885
15	91		443,895,450	443,880,933	443,856,767	446,173,031
	92		426,215,694	426,201,756	426,178,551	428,402,562
	93		1,454,017,035	1,453,986,565	1,453,935,839	1,449,319,658
	94		89,388,203	89,460,065	89,579,701	89,546,061
	95		51,113,360	51,069,241	50,995,792	51,119,934
	96		38,784,585	38,815,765	38,867,674	38,853,078
16	97		202,107,968	202,215,747	202,251,237	202,322,206
	98		3,342,848,623	3,344,631,288	3,345,218,283	3,346,392,109
	99		724,330,963	721,682,105	720,809,891	719,065,706
	100		398,109,854	398,322,157	398,392,064	398,531,858
	101		827,177,275	827,618,390	827,763,640	828,054,099
	102		196,886,718	196,991,713	197,026,285	197,095,421
17	103		820,932,187	820,671,538	820,237,941	821,976,774
	104		381,053,107	381,250,834	381,579,760	380,260,687
	105		429,178,694	429,042,428	428,815,746	429,724,798
	106		383,867,200	384,066,387	384,397,742	383,068,928
18	107		1,051,728,263	1,052,643,863	1,053,349,677	1,051,732,900
	108		473,323,267	471,518,857	470,795,825	470,314,886
	109		219,032,050	219,294,229	219,560,231	218,746,477
	110		971,843,426	972,210,181	972,064,572	973,768,595
	111		688,635,287	688,895,164	688,791,988	689,999,435
19	112		1,358,125,624	1,358,023,638	1,357,853,873	1,358,533,849
	113		5,445,790,399	5,445,381,459	5,444,700,736	5,447,427,296
	114		227,830,860	228,004,356	228,293,158	227,136,396
	115		443,106,041	443,443,471	444,005,159	441,755,383
LTS	LTS		52,377,548,240	252,390,232,078	252,410,856,779	252,453,508,672
	EXCISE		59,178,948,871	59,181,838,932	59,186,976,592	59,196,316,139
	LTDO-MKTI		20,579,438,646	20,563,352,010	20,536,678,158	20,483,029,754
	LTDO-CEBU		10,499,158,357	10,499,671,094	10,500,582,586	10,502,239,549
	Sub-total		<u>672,662,000,000</u>	<u>672,662,000,000</u>	<u>672,662,000,000</u>	<u>672,662,000,000</u>
	Add: Special Taxes					
	Excise Tax					58,720,000,000
	T-Bills					30,391,000,000
	Stock Transactions					3,575,000,000
	Travel Tax					<u>510,000,000</u>
	Total					<b>765,858,000,000</b>

**Annex "E"**

**TEXT OF BIR REVENUE MEMORANDUM ORDER 7 - 2007**  
**SUBJECT: ALLOCATION OF THE CY 2007 BIR COLLECTION GOAL BY OFFICE**  
**APRIL 25, 2007\***

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\* Only the main text of the RMO is presented here. The annexes of the RMO are listed but their texts are not included.

April 25 , 2007

**REVENUE MEMORANDUM ORDER NO. 7- 2007**

**TO : All Assistant Commissioners, Regional Directors,  
Revenue District Officers and Other Officers Concerned**

**SUBJECT : Allocation of the CY 2007 BIR Collection Goal  
By Implementing Office**

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**I. CY 2007 Overall Collection Goal**

The overall CY 2007 collection goal of the Bureau as set by the Department of Finance (DOF) is ₱ 765,859 million. This is 17.33% higher than CY 2006 actual collection of ₱ 652,750 million. Out of the ₱ 765,859 million, ₱ 730,470 million is for BIR Operations and ₱ 35,389 million is for Non-BIR Operations. Under BIR Operations, ₱ 27,549 million accounts for the goal on Republic Act (RA) No. 9337 (New VAT Law) based on the National Government Revenue Program (NGRP) run date February 14, 2007.

The breakdown of the goal, by major tax type, is as follows:

TAX CLASSIFICATION	CY 2007 Goals ( in Millions)		
	Total	BIR Operations	Non-BIR Operations
<b>TOTAL</b>	<b>₱ 765,859</b>	<b>730,470</b>	<b>35,389</b>
I. INCOME TAXES	433,424	403,033	30,391
II. EXCISE TAXES	58,720	58,720	
III. VALUE - ADDED TAXES	183,254	183,254	
IV. PERCENTAGE TAXES	46,778	46,778	
V. OTHER TAXES	43,684	38,686	4,998

**II. Data Used**

The following data were used in the computation of the final goal allocation:

- A. Actual CY 2006 collection based on BIR Form 12.09 reports from the Revenue Accounting Division (RAD) dated March 13, 2007;
- B. Collection Data Considered as Refinements:
  - 1. Reconciled CY 2006 Collection data on Enlisted/Delisted Large Taxpayers by Revenue District Office as of April 20, 2007 (Sources: Regional Offices and Large Taxpayer Service);

2. Tax payments of *transferred taxpayers* (regular transfers) in CY 2006 (100% considered) per reports of implementing offices;
3. Special Taxes: Tax on Treasury Bills, Travel Tax, Excise Taxes for CY 2006 (Source: RAD report, March 13, 2007);
4. Income Tax collections (corporate and branch profit remittance taxes) for CY 2006 from MALAMPAYA Consortium (Sources: RDO 53-Las Piñas & Muntinlupa, RDO 44-Taguig & Pateros, Large Taxpayers Service (LTS));
5. Non-recurring transactions for CY 2006, each of which accounts for at least 10% of the district's total collection for a particular month, per report (with supporting documents) of implementing offices;
6. Tax payments of *closed establishments* in CY 2006 per reports of implementing offices (100% considered);
7. Withholding Taxes of Local Government Units (LGUs) for CY 2006 by implementing office (Source: Withholding Tax Division, report dated February 21, 2007);
8. Withholding taxes on Wages (WW) for CY 2006 (Source: BIR Form 12.09 report, RAD, March 13, 2007);
9. Early payments in CY 2006 that have an effect in 2007 collection trend per reports of implementing offices;
10. Taxes from Independent Power Producers (IPPs) net of MALAMPAYA Consortium for CY 2006 per reports of implementing offices;
11. Withholding Taxes of National Government Agencies (NGAs) for CY 2006 paid thru Tax Remittance Advice (TRA), by implementing office (Source: RAD, February 27, 2007);
12. Tax subsidies thru Special Allotment Release Orders (SARO) for CY 2006 per reports of implementing offices; and
13. Other available data peculiar to selected implementing offices that may adversely affect their collection trends: Cost of Damages to Agricultural Sector by tyhoons "Milenyo" and "Reming" as of Dec. 16, 2006 (Source: National Disaster Coordinating Council and Department of Agriculture); The amount considered as refinements is 10% of the total cost of Agricultural damages exceeding ₱100 million, from either typhoon "Milenyo" or "Reming," whichever is higher.

### C. Other Data Considered:

1. Estimates of Tax Subsidy of GOCCs / Commissaries for CY 2007 from National Tax Research Center (NTRC) as of April 2, 2007 report;
2. List of corporations registered with the Board of Investments (BOI) and Philippine Economic Zone Authority (PEZA) with expired Income Tax Holidays (ITH) for CY 2006 and CY 2007. Income tax potential was processed by the Statistics Division based on the CY 2005 income tax returns filed by said corporations and reviewed/validated by the Policy and Planning Service, as of April 10, 2007 (Sources: BOI, PEZA, Audit Information Tax Exemption and Incentives Division, various BIR implementing Offices);
3. National Government Revenue Program (NGRP) dated February 14, 2007 from the Department of Finance (DOF);
4. CY 2007 Excise Taxes monthly allocation by product as provided by the LTS dated April 12, 2007; and
5. CY 2007 monthly program on the volume of issuance and corresponding taxes (Documentary Stamp Tax and Final Withholding Tax) on government securities as provided by the Bureau of Treasury (BTr) dated January 15, 2007.

## III. Goal Allocation Methodology

### A. General Methodology

1. The provisions in the Implementing Rules and Regulations of the Lateral Attrition Act served as the guide for the CY 2007 goal allocation.
2. The BIR goal was divided into BIR Operations and Non-BIR Operations. BIR Operations refer to the collection goal on which the Bureau has direct control to collect revenues, while the Non-BIR Operations refer to the collection goal on which the Bureau has no control to be able to collect revenues. CY 2007 goal for BIR operations is ₱ 730,470 million, computed as follows:

Total CY 2007 BIR Goal	₱ 765,859 M
Less: CY 2007 Goal on Non- BIR Operations:	
Final Income Tax on T-Bills	₱ 30,391M
DST on T-Bills	4,488 M
Travel Taxes	<u>510 M</u> <u>35,389</u>
CY 2007 Goal on BIR Operations	₱ 730,470 M

3. CY 2006 collections of implementing offices were refined by using the data enumerated in Section II.B. See Annex D.

4. Goals for CY 2007 (Annex D-1) were derived as follows:
  - a) Selected data in Section II.B were given the applicable growth rates for CY 2007, as follows: LGUs -14%; withholding tax on wages-12%; early payments-0%; IPPs-10%; and TRAs-12%;
  - b) Non-recurring collections for CY 2006 were given zero percent (0%) growth for LTS and on the total for all Revenue Regions and was attributed as “Goal from Other Sources, Including Non-Recurring” for CY 2007. The total goal for Revenue Regions on this item was allocated among the Regions proportionately to their goals on regular cash collections.
  - c) Excise tax goal of ₱ 58,720 M was taken from the NGRP and was allocated as follows: ₱58,578 million was allocated to LTS and the remaining ₱142 million on mining and quarrying was allocated to implementing offices, where applicable, based on ratio and proportion of their CY 2006 actual collection;
  - d) *CY 2007 Goal on MALAMPAYA* of ₱ 9,897 million taken from the NGRP (consisting of corporate income tax and branch profit remittance taxes) was allocated to the LTS; and
  - e) Potential collections due to the expiration of ITH that have revenue impact in CY 2007, as well as estimated revenues from tax subsidy, were allocated directly to the implementing units where these corporations are registered.
5. A resulting balancing growth rate was applied to the refined/regular cash collections for all implementing offices to arrive at the total goal for BIR operations.
6. MANCOM’s independent assessment of the revenue potential by identified regions, taking into account the emerging economic developments therein.

### **Goal Allocation by Major Tax Type**

CY 2007 total BIR goal by major tax type, from existing measures and administrative measures were based on the NGRP with run date February 14, 2007, as provided by the DOF (See Annex A).

The breakdown of the goal for RA No. 9337, for each specific measure under said law, is shown in Annex B. Specific line items attributable to particular implementing offices were allocated directly to concerned offices.

## Goal Allocation by Quarter and by Major Tax Type (Annex C)

1. Quarterly goal allocation for Excise Taxes was provided by the LTS.
2. CY 2007 Quarterly allocation for DST and Final Withholding Tax on T-bills was based on the monthly goal provided by the BTr.
3. Total goal for Travel Tax culled from the NGRP was equally allocated among the four (4) quarters.
4. For the remaining tax types, goal allocation was based on the 2006 actual quarterly collections and adjustments for likely CY 2007 collection trend due to the impact of non-recurring transactions in CY 2006 and CY 2007 work programs.

## Goal Allocation by Implementing Offices

### 1. Balancing Growth Rate

Following the general methodology in Section III.A above, a balancing growth of 26.63% was arrived at using the following formula:

$$\begin{aligned}\text{Balancing Growth Rate} &= [ (A-B)/B ] \times 100\% \\ &= [ (\text{P } 460,318 \text{ M} - \text{P } 363,512 \text{ M}) / \text{P } 363,512 \text{ M} ] \times 100\% \\ &= 26.63\%\end{aligned}$$

Where: **A** = 2007 Total Goal on regular Cash collections from BIR Operations

**B** = 2006 Regular cash collections from BIR Operations.

This balancing growth rate was applied to each of the implementing offices' total regular cash collections for CY 2006 to arrive at their corresponding goals on regular cash collections for CY 2007.

### 2. Quarterly Allocation of Goal by Implementing Office

The CY 2007 overall goal by implementing office (LTS and Revenue Regions) was allocated by quarter and by major tax type using ratio and proportion method based on the adjusted actual CY 2006 quarterly collections (net of CY 2006 tax subsidies, non-recurring collections which passed the 10% threshold, and aligned with the transfers of taxpayers). Details of quarterly allocations by major tax type and by implementing office are presented in Annexes E-1 to E-7.

### 3. Total Goal Allocation by Revenue District Office

Presented in Annex F is the Total CY 2007 goal allocation by Revenue District Office (RDO), including the offices under the Large Taxpayers Service, using the same methodology shown in Annexes D and D-1 and MANCOM's assessment of the revenue potential of the revenue districts.

The Implementing Offices shall prepare the breakdown by revenue district office, by period and by tax type following the goals in Annexes E-2 to E-7. This breakdown shall be submitted to *The Assistant Commissioner, Policy and Planning Service, Attention: Chief, Statistics Division* for consolidation *not later than May 4, 2007*.

### IV. Crediting of Collections due to External Policy Changes and Transfer of Taxpayers Effected During the Year Affecting the Baseline for Goal Allocation

A Memorandum on the crediting of collections due to transfer of taxpayers effected during the year and external policy changes beyond the control of the Bureau which will affect the collection performance of the concerned implementing offices shall follow immediately upon approval of this Order.

### V. List of Annexes

Annex A	Collection Goal By Major Tax Type, CY 2007
Annex B	Details of Goal for R.A. No. 9337 (New VAT Law), CY 2007
Annex C	Quarterly Collection Goal By Major Tax Type, BIR Operations and Non-BIR Operations, CY 2007
Annex D	CY 2006 Collection Refinements for CY 2007 Goal Allocation By Implementing Office
Annex D-1	Collection Goal Allocation By Implementing Office, CY 2007
Annex E-1	Quarterly Collection Goal Allocation By Implementing Office and Major Tax Type, CY 2007

Annex E-2	Quarterly Total Collection Goal By Implementing Office, CY 2007
Annex E-3	Quarterly Collection Goal For Income Taxes By Implementing Office, CY 2007
Annex E-4	Quarterly Collection Goal For Excise Taxes By Implementing Office, CY 2007
Annex E-5	Quarterly Collection Goal For Value-Added Tax By Implementing Office, CY 2007
Annex E-6	Quarterly Collection Goal For Percentage Taxes By Implementing Office, CY 2007
Annex E-7	Quarterly Collection Goal For Other Taxes By Implementing Office, CY 2007
Annex F	Total Collection Goal By Revenue District Office, CY 2007

## **VI. Effectivity**

This Order takes effect immediately.

**JOSE MARIO C. BUÑAG**

**Commissioner of the Internal Revenue**

## **Annex “F”**

### **LIST OF MAJOR TAXES AND TAX BASES**

**LIST OF MAJOR TAXES AND TAX BASES**

TYPE OF TAX	TAX BASE
<b>I. TAXES ON NET INCOME AND PROFIT</b>	
A. Corporation	
1. Corporate income tax	Net taxable income = gross income less deductions
2. Tax on passive and other income (i) interest on deposits (ii) royalties	Gross amount of interest income Gross amount
3. Minimum corporate income tax	Gross income beginning on the fourth taxable year immediately following the year of commencements of business operations; payable when minimum income tax is greater than the regular corporate income tax
4. Tax on gains from sale of shares of locally non-traded stocks	Net capital gains
5. Tax on gains from sale of lands/buildings treated as capital assets	Gross selling price
B. Individual	
1. Tax on compensation income	Taxable compensation income = gross compensation income minus allowable deductions and personal and additional exemptions
2. Tax on business income and income from profession	Net taxable income = gross income minus allowable deductions and personal and additional exemptions
3. Tax on passive income (i) interest on deposits (ii) property dividends & shares in net profits (iii) capital gains from sales of shares of stock (iv) capital gains from sale of real properties	Gross amount of interest income Gross amount of dividends Net capital gains Gross selling price or current fair market value
<b>II. ESTATE AND DONOR'S TAXES</b>	
A. Estate tax	Net Estate = gross estate less allowable deductions
B. Donor's tax	Fair market value of the total gifts
<b>III. VALUE-ADDED TAX</b>	
A. VAT on sale of goods or properties	Gross sales = Gross selling price times quantity

Continuation

<b>TYPE OF TAX</b>	<b>TAX BASE</b>
B. VAT on importation of goods	Total value of imports plus customs duties, excise taxes, if any, and other charges
C. VAT on sale of services and use or lease of properties	Gross receipts
<b>IV. OTHER PERCENTAGE TAXES</b>	
A. On domestic carriers and keepers of garages	Gross receipts
B. On international carriers	Gross receipts
C. On franchises	Gross receipts
D. On overseas dispatch, message or conversation originating in the Philippines	Amount paid for the service
E. On banks and non-bank financial intermediaries	Gross receipts
F. On finance companies	Gross receipts
G. On life insurance premiums	Gross premiums
H. On amusement taxes	Gross receipts
I. On winnings	Actual amount of winnings
J. On sale of shares of stocks	Gross sales
<b>V. EXCISE TAXES</b>	
A. Alcohol products	
1. Distilled spirits	Per proof liter
2. Wines	Per liter of volume capacity
3. Fermented liquor	Per liter of volume capacity
B. Tobacco products	
1. Cigars & cigarettes	Per cigar / per pack
2. Chewing tobacco	Per kilogram
3. Other tobacco products	Per kilogram
C. Tobacco inspection fee	
D. Manufactured oils and other fuels	Per liter of volume capacity / Per kilogram / Per liter
E. Automobiles	Selling price net of excise tax and VAT
F. Non-essential goods	Wholesale price or value of importation
G. Mineral products	Per metric ton / actual market value of removals
<b>VI. DOCUMENTARY STAMP TAXES</b>	

Reference: National Tax Research Center (1998), Comprehensive Index on Taxation in the Philippines

## **Annex “G”**

### **INDICATIVE LISTING OF PERFORMANCE STANDARDS AND PERFORMANCE INFORMATION OF A MODERN TAX ADMINISTRATION IN A DEVELOPED COUNTRY (CROTTY, 1996)**

## INDICATIVE LISTING OF PERFORMANCE STANDARDS AND PERFORMANCE INFORMATION OF A MODERN TAX ADMINISTRATION IN A DEVELOPED COUNTRY

### Taxpayer registration

- ✍ All taxpayer identification numbers to be issued within three days of receipt of registration applications

### Collections

- ✍ Revenue targets, by month, and by tax
- ✍ All tax payments to be deposited to the relevant government account within 24 hours of receipt

### Returns processing

- ✍ 95 percent of VAT returns to be processed within 5 days of receipt
- ✍ 95 percent of withholding tax returns to be processed within 5 days of receipt
- ✍ 90 percent of electronically filed income tax returns to be processed within 2 weeks
- ✍ 80 percent of non-electronically filed income tax returns to be processed within 4 weeks
- ✍ 90 percent of amendments initiated by taxpayers to be processed within 6 weeks
- ✍ 90 percent of requests for payment of interest on overpayment of tax to be processed within 30 days,

### Stopfilers

- ✍ All VAT and withholding tax stopfilers to be contacted within 10 days of the monthly return filing date
- ✍ Income tax stopfilers to be contacted as follows:
  - ✍ 95 percent of level 5 and 6 taxpayers within 4 weeks of the filing date
  - ✍ 90 percent of level 3 and 4 taxpayers within 6 weeks of the filing date
  - ✍ 80 percent of level 1 and 2 taxpayers within 8 weeks of the filing date
- ✍ VAT and withholding tax returns outstanding after each month should not exceed 2 percent of registered taxpayers

- ✍ Annual income tax returns outstanding at the end of the fiscal year should not exceed:
  - ✍ 1 percent for level 5 and 6 taxpayers
  - ✍ 3 percent for level 3 and 4 taxpayers
  - ✍ 5 percent for level 1 and 2 taxpayers

## **Debt collection**

- ✍ All VAT and withholding taxpayers should be contacted within 10 days of the monthly payment date to collect outstanding payments
- ✍ Income tax taxpayers should be contacted to collect outstanding tax payments on annual returns filed, as follows:
  - ✍ Within 5 days, for level 5 and 6 taxpayers
  - ✍ Within 15 days, for level 3 and 4 taxpayers
  - ✍ Within 30 days, for level 1 and 2 taxpayers
- ✍ Tax revenue from all sources that is due but not collected should not exceed 3 percent of total collections
- ✍ Number of cases completed per person per year

## **Auditing**

- ✍ Number of audits completed per person per year
- ✍ Number of audits completed
  - ✍ By type of tax
  - ✍ By type of audit
  - ✍ By type of taxpayer
- ✍ Percentage of audits where taxpayer accepted assessment
- ✍ Percentage of taxes assessed where taxpayer did not seek review
- ✍ Percentage of tax assessed where taxpayer's appeals were not successful
- ✍ Percentage of audits completed within prescribed time limits, by type of audit

## **Taxpayer service**

- ✍ Number of tax inquiries handled per person per year
  - ✍ By telephone
  - ✍ By office interview
  - ✍ By letter

- ✍ 90 percent of telephone inquiries to be answered within 10 minutes
- ✍ 90 percent of face-to-face inquiries to be answered within 20 minutes
- ✍ 90 percent of ruling requests to be answered within 4 weeks

**Reference:**

Lifted from John Crotty (1996) Performance Standards in Tax Administration, 30<sup>th</sup>  
General Assembly of the Inter-American Center of Tax Administration,  
Unpublished manuscript

## **Annex “H”**

### **HIGHLIGHTS OF THE FOCUS GROUP DISCUSSIONS ON INDIVIDUAL GOAL ALLOCATION MARCH 9, 2007**

**HIGHLIGHTS OF THE FOCUS GROUP DISCUSSIONS  
ON INDIVIDUAL REVENUE GOAL ALLOCATION  
MARCH 9, 2007**

**A. FGD Objectives**

The objectives of the FGDs were:

- (i) To get feedback on the proposed goal allocation scheme at the individual level
- (ii) To identify issues and problems in the allocation of goals to officials and employees of the BIR
- (iii) To gather ideas and suggestions on the allocation of goals to BIR officials and employees

**B. Background**

Section 3 of RA 9335 provides that “The system of rewards, incentives and sanctions provided in this Act shall cover all officials and employees of the BIR and BOC, regardless of employment status, with at least six months of service.”

Section 7(b) of the Act bestows on the Revenue Performance Evaluation Board the following powers and responsibilities:

“To set the criteria and procedures for removing from service officials and employees whose revenue collection falls short of the target by at least seven and a half percent (7.5%), with due consideration of all relevant factors affecting the level of collection as provided in the rules and regulations promulgated under this Act, subject to civil service laws, rules and regulations and in compliance with substantive and procedural due process: x x x”

**C. Findings**

The Attrition Act and its Implementing Rules and Regulations focus only on the collection performance as basis for removing or subjecting to attrition, officials and individuals of the Bureau. This is a major flaw of the Act that brings forth a number of problems and issues:

1. Since Section 3 of the Act provides that all officials and employees of the Bureau shall be subject to attrition, all individuals in the Bureau should, therefore, be assigned collection targets. However, only the following officials and employees of the BIR have direct influence or link to collection and can be reasonably assigned collection targets: revenue officers (Assessment Group), collection agents in RDOs without AABs, seizure agents, and revenue district officers by virtue of command responsibility. By command responsibility the collection target and attrition should

extend to regional directors, deputy commissioner for operations, and the commissioner. If the officials at the national office level would not be subject to attrition, they should be prepared to delegate more of their authorities (e.g., audit program) to the regional directors.

2. The assignment of collection target to individuals is currently practiced only by individuals with assessment function. The practice is to assign 3 percent of the RDO collection target to the Assessment Section, which in turn is distributed to the revenue officers or examiners. Nonetheless, there are several issues raised concerning the assignment of collection target and cases, which include: unfair assignment of cases, favoritism, “*care of ...*” The revenue assessment officers believed that these issues and intrigues could be further heightened by the RA 9335, which is focuses only on collection.
3. Only around 40 percent of the work performed by BIR yields direct collection; those activities and efforts exerted by officials and employees, which do not yield direct collection, are ignored. The revenue assessment officers pointed out that they perform many functions: investigation, ONETTT/OD, tax mapping, stocktaking, etc., but not all result in immediate collection. They pointed out that there are also instances where after completing assessment work; they still could not collect simply because the tax payer could not afford to pay. Thus, it would be unreasonable for these revenue assessment officers to subject to attrition only on the basis of failing to meet their collection targets.
4. The distribution of the voluntary collection target, which accounts for 97 percent of the collection target, to individuals, is a major problem. The draft RMO provides that it be distributed to revenue officers of the collection section. However, this was vigorously objected by the FGD participants. They pointed out that revenue collection officers, except for those without AABs, have very limited control or any direct influence on revenue collection. According to revenue collection officers, they are willing to be subject to attrition should they fail in the performance of their work – that is, on the basis of key performance indicators or PMS – but not on the sole basis of individual collection target.
5. Why should there be separate RMOs on attrition and rewards? Why is that only selected officials and individuals are subject to attrition, while all are entitled to rewards? This is because the basis of attrition in the law and its IRR is only the collection target. Since only certain individuals can be reasonably and directly assigned collection target, they are the only ones that are subject to attrition. On the other hand, the rewards framework considers other factors in the distribution of rewards, such as key performance indicators (KPIs) or PMS indicators. Under PMS, all officials and individuals can be assigned KPIs, which are the bases of rewards.

6. It is unfair to impose ever increasing collection targets to the Bureau and to its officials and employees, and subject them to attrition, unless:
- (i) The criteria for the goal allocation prescribed in Section 6 of the IRR can be employed.
  - (ii) The DBCC can demonstrate that the target assigned to the bureau is realistic and reasonable.
  - (iii) The BIR is provided with additional manpower and budget. If the country's tax collection effort is to be at par with other countries, the BIR's manpower, salaries, and budget should be comparable to the revenue authorities of those countries.
  - (iv) The deployment of manpower and resources should be equitably distributed. The basis for the distribution of manpower and resources should be clear: Is it the size of collection or the number of taxpayers?

#### **D. Suggestions on the goal allocation formula**

The draft RMO provides that only Regional and Assistant Regional Directors, Revenue and Assistant Revenue District Officers, and those performing functions resulting to collection (collection and assessment group) will be given individual allocation goals. The individual goal assignment is based on the following formula:

- Unit target = Target of Head and Asst Head of Unit
- Unit target = Voluntary Collection Target + Assessment Collection Target
- Voluntary Collection Target = sum of the targets of ROs with collection function
- Assessment Collection Target = sum of the targets of ROs with assessment and audit functions

Subject to the conditions enumerated in item C.6 above, the following alternative allocation schemes were suggested:

1. Only Regional District Officers should be given collection targets; all the rest should be assigned key performance indicators (KPIs) targets. Collection is the result of concerted efforts of all individuals in the bureau. However, most of the rank-and-file employees have very limited influence or direct control over collection; they can be held only directly accountable for their KPIs. If they are properly managed and they meet their KPIs, revenue collection will follow.
2. All must share in collection target. All officials and employees should be assigned collection target. Three percent of the RDO collection target representing deficiency tax collection shall be assigned to the assessment section. The remaining 97 percent of the collection target representing voluntary payments should be a shared goal: 50

percent to the assessment section, 30 percent to the collection section, and 20 percent to other sections in the RDO. It is not yet clear, however, how this could be made operational.

3. Refine further the assignment of collection target, and assign KPIs to those who cannot be reasonably assigned collection target. In addition to the 3 percent RDO collection target, the assessment section should be given a share in the voluntary collection target based on their other activities. For example, under the Tax Account Management Program, the assessment section monitors compliance of the top 1,500 taxpayers. A growth target in the tax collection from these taxpayers can be added to the collection target of the assessment section. For example, if the voluntary collection target assigned to the RDO grew by 18 percent, then an 18-percent growth in collection from the taxpayers monitored by the assessment service could be its additional target. The collection service could be assigned to monitor other taxpayers outside of the top 1,500 and be assigned similar collection target. Those who cannot be reasonably assigned direct collection targets should be assigned KPI targets.

In summary, RA 9335 and/or its IRR should be amended to include other bases, besides collection, in the attrition of officials and individuals of the bureau. If attrition is to be enforced, then all should be subjected to it so that all individuals have the same sense of urgency to perform their functions. Those who cannot be directly assigned collection targets should be assigned PMS or key performance targets, which should be their bases for attrition.

## **Annex “I”**

### **A GUIDE TO STATISTICAL PROCEDURES IN REVENUE GOAL ALLOCATION**

## A. RATIONALE FOR USING STATISTICAL PROCEDURES IN GOAL ALLOCATION

1.1 **Use of Statistical Procedure.** Based on the review of the R. A. 9335 or Attrition Act of 1995 law and its IRR and the recommended system for goal allocation, statistical procedures are necessary due to the following reasons.

- (a) The bureau shall establish a system of rationally allocating revenue targets among its Districts, Officials and Employees (IRR Sec. 6).
- (b) The factors identified should be the major determinants in setting the target revenues along with the District's historical record of revenue collection: Provided, however, that target setting shall likewise consider fluctuations in prior years' collection due to non-recurring transactions (IRR Sec. 6.a).
- (c) The distribution of revenue targets among Officials and Employees, as provided in Section 7(b) of the Rules, shall be submitted by each Bureau on or before the deadline prescribed by the Board.

1.2 **Data Comparability Concerns.** The need to consider the historical collection (without the system for the identified major determinants), the fluctuations due to non-recurring transactions in prior years and the expedient preparation of the rationally allocated collection goal require for statistical procedures as applicable to bureau's data on revenue collection subject to the following limitation on the bureau's data on tax collection.

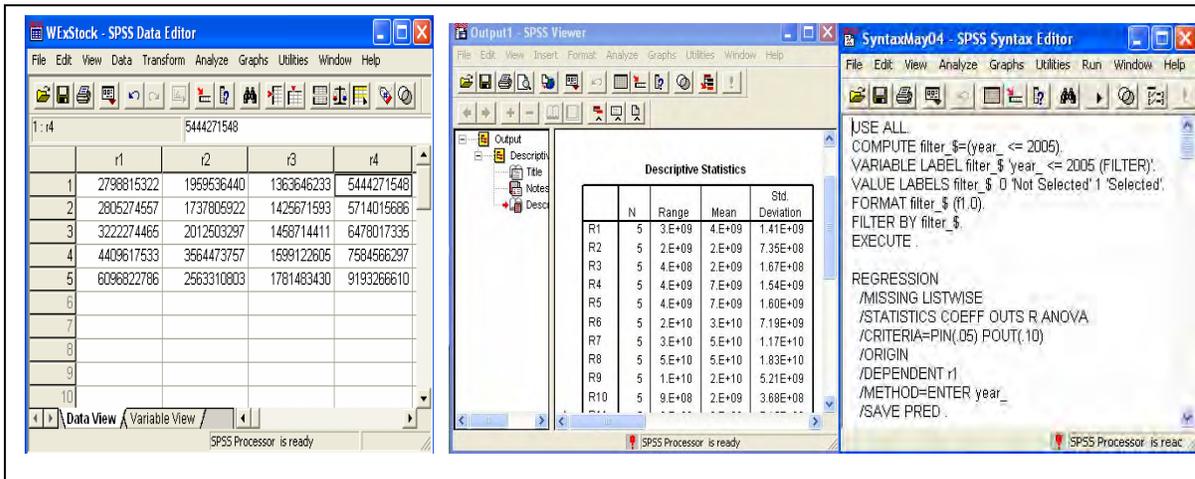
- (a) The accounting of revenue collection to administrative unit (region and district office) had been fixed to 20 revenue regions and 119 district offices from CY 2002-2003.
- (b) The assignment of some special taxes (tax from treasury bills, documentary stamp on treasury bills, excise tax, stock transactions' tax, and travel taxes is not consistent along with the policy-mandated transfer of few large taxpayers (but with considerably large tax settlement) from one region to another across the years.

1.3 **Specific Sources of Data Shifts.** In particular, per GFS12.09 recording of the bureau: documentary stamp tax on treasury bills is not identified in the system but recorded in total along with other documentary stamp tax from other sources until CY 2006; excise tax was not broken down per RDO/region for CY 2004-2005; and stock transaction tax was not reconciled as to original district of collection for CY 2005. The said concerns were not reconciled to date as the system database was not programmed to account for the first, and reports for the two others did not provide for the same due to policy changes on the said revenue type were implemented during the said years.

## B. COVERAGE AND BASIC SPSS OPERATIONS

2.1 **Statistical Procedures to be Covered.** With the constraints of the bureau's data, the statistical procedures: (i) outlier analysis for non-recurring transactions, (ii) simple regression through the origin (TRO) as adjustment of natural tax base, (iii) cluster analysis for profiling, and (iv) integrative application of the procedures in goal allocation based on contribution to growth using RTO and clustering - will be covered in this guide. All of the said procedures will be implemented using SPSS for statistical procedures and Ms-Excel as Computational Worksheet.

2.2 **Getting Started with SPSS.** SPSS is a statistical analysis package for standard procedures and specialized applications. SPSS has four (4) basic interactive interfaces: data editor, log/output file, and syntax window.

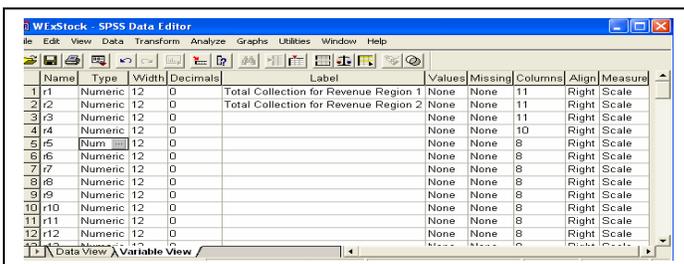


The routines in SPSS can be implemented through click-and-drag in the Data Editor facility or syntax-driven commands in the Syntax Window. For every routine that can be performed using the click and drag method through the sequential dialog boxes could also be cumulated in the Syntax Window for batch processing and/or documentation purposes through the Paste option. In a click and drag approach, all procedures are executed once the OK button is pressed but in the Syntax Mode clicking the run icon will execute the command (or specific procedure that is highlighted among the saved/pasted or procedures/routines).

To open the software from the program group, click the SPSS icon. To open a file from the menu bar, either click the Open icon or click the Open menu and drag into the scroll button for the specific file to be opened (data, output, syntax, etc) and look for the specific file location.

To start a file, use the Data Editor for encoding the data in variable (column) and case (row) format.

To copy a file from Excel Worksheet highlight the data columns (excluding the column or row label) through the Edit Menu (Copy) or by pressing Ctrl+C and pasting the file in the SPSS Data Editor via Edit Menu (Paste) or by pressing Ctrl+V.



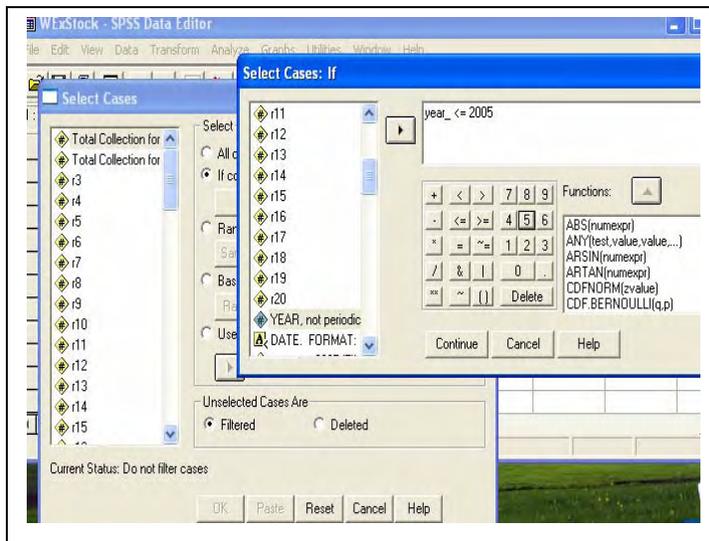
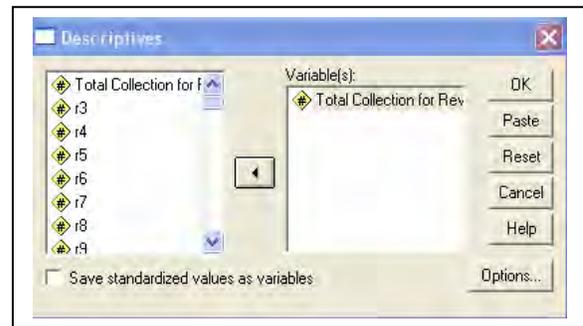
To label, edit and define data structures (some file formats are automatically read and adopted by SPSS if the specification in the Open dialog box is invoked) an accompanying Variable View (worksheet) allows for change in format and structure of the variables.

To save a working file, click the Save As in the File Menu. depending on the file, the extension varies with data .sav for data, .spo for output and .sps for syntax.

Outputs could be also saved by dumping it to a pre-specified file and could be printed directly from a default printer or after pasting into another file (MS-Office).

To generate a date variable, click Data in the Menu Bar, then Define Date and select the year in the options. Automatically, two (2) new variables will appear in the Data Editor view: a numeric date variable and a categorical date variable to serve both the purpose of quantitative and qualitative analysis.

All procedures involving a variable in SPSS start with invoking the procedure either through the menu bar (or in the syntax mode) for a particular variable in the list. Using the dialog box a procedure is easily performed by clicking the concerned variable into the variable portion of the dialog box and the corresponding specifications for the said procedure. The dialog box illustrates how to request descriptive statistics.



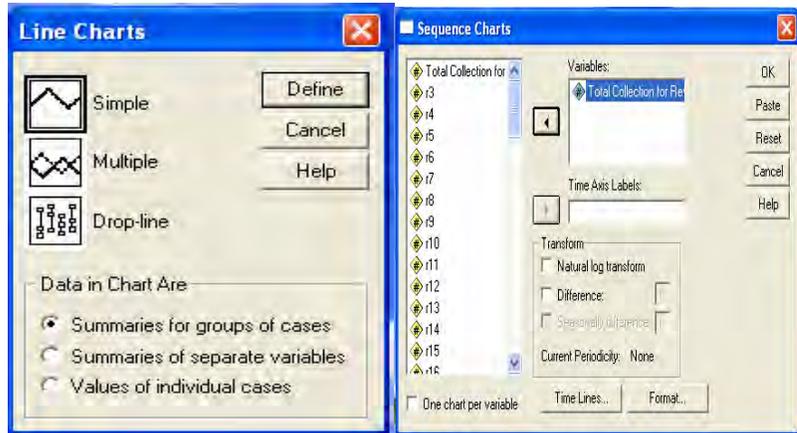
Another useful data management routine is the filter function in SPSS. To select a subset of cases to be used in analysis, click Data in the Menu Bar, then Select Case and define the mathematical rule for the said selection. A new data set could be generated if the unselected cases are to be deleted. (WARNING: deleting unselected cases will not automatically save the new data set but once saved with the same file name the old file could not be recovered, hence, always save a new file with a new file name).

### C. REVIEW OF STATISTICAL PROCEDURES

**3.1 Graphical Analysis for Fluctuations in Prior Years' Collection.** As provided for by in the provisions of the IRR, fluctuations in the prior years' collection due to non-recurring transactions must be considered in revenue target setting. With the framework of using statistical technique in adjusting collection data rather than accounting approach in the initial goal allocation, line charts and box-and-whiskers' plot could be employed to evaluate whether extreme changes in the historical collection is present in the data set. This will provide a preliminary appreciation of the historical behavior of the data set.

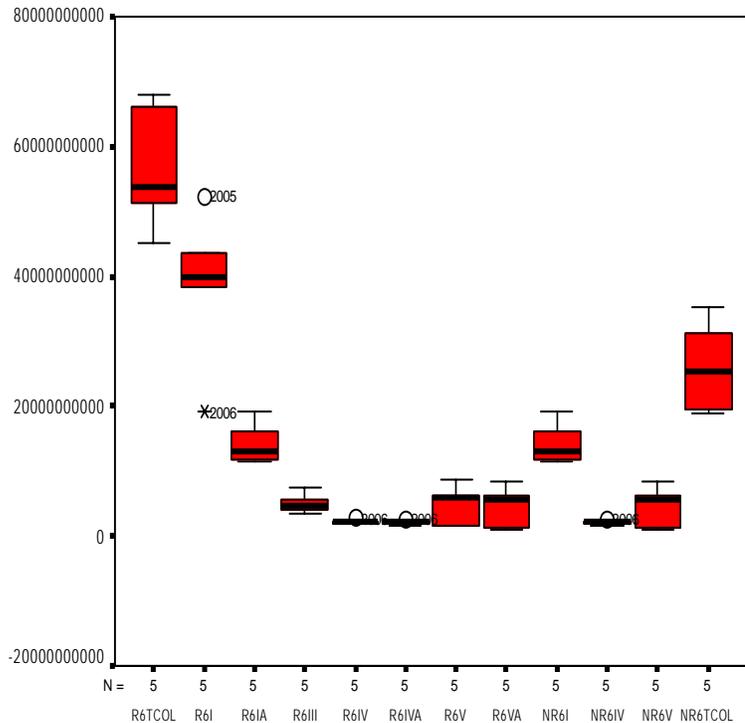
### 3.1.1 Line or Sequence Charts for Historical Projection.

For a time series data, the usual projection display is through a historical chart. A line chart (simple or multiple) in SPSS is different from against a sequence chart as the former is simple line chart of the original series or a number of series while the latter allows plotting a time series data as is or through some transformations.



### 3.1.2 The Box and whisker's Plot for Comparative Display and Outlier Detection.

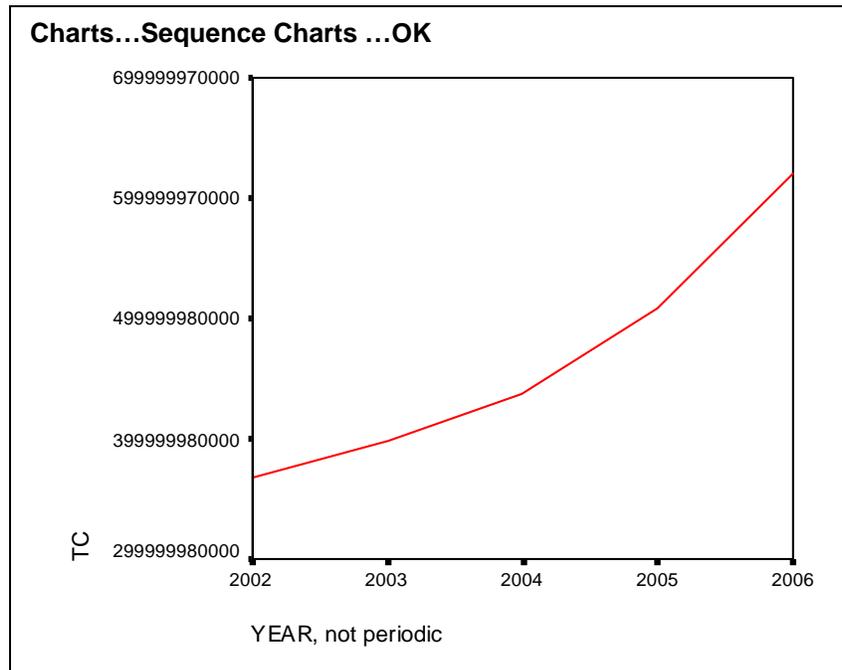
A very simple but useful pictorial representation of the data distribution is a box and whiskers' plot, which displays a box that extends from a lower quartile to the upper quartile (with the median shown in the middle of the box). The lower quartile, median and upper quartiles are the 25<sup>th</sup>, 50<sup>th</sup> and 75<sup>th</sup> percentiles of the distribution. If the values in a distribution are sorted from lowest to highest, they divide the distribution into four (4) parts, with the lower quartile being the value for which 25% of the data are below it, the median being the value for which half of the data are below it (and half are above it), and the upper quartile being the value for which 75% of the data are below it. Whiskers are drawn to represent the smallest and largest data within 1.5IQR (inter-quartile range) from the lower and upper quartile, respectively, where IQR is the difference between the upper and lower quartiles. Points beyond the 1.5 IQR limits from the quartiles are considered outliers, i.e., extreme points in the distribution. The advantage of using a box plot lies in its comparative capability which facilitates the appreciation visually. To generate a box plot in SPSS, click Graphs in the Menu Bar, then select box plot (it is also automatically produced in the Explored procedure). To specify a single or multiple box plots select among the choices in the dialog box.



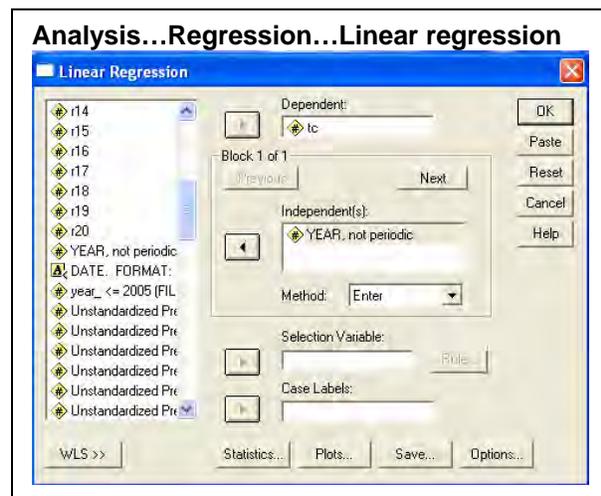
### 3.2 Regression Through the Origin (RTO) Using Ordinary Least Square (OLS).

#### 3.2.1 Regression Concept.

Considering an input-output framework, a two-dimensional scatter plot could be generated with the input variable plotted along the vertical (also called x) axis and the output variable plotted along the horizontal (also called y) axis. The input or x variable is sometimes called a covariate or an independent, exogenous, explanatory, regressor or control variable, while the output or y-variable is called the regressand or the dependent, endogenous, explained, or response variable. Most economic time-series will have an increasing plot through time. In case of a data with a scatter diagram appearing rather randomly, describing the pattern will be plausible without other information. (For obviously non-linear relationship some statistical software have a facility for curve fitting to determine the appropriate relationship between X and Y). The classical regression analysis specifies how much of an increase in the y-value is associated with a unit increase (or decrease) in the x-value through the model:  $Y = \beta_0 + \beta_1 X + \varepsilon$



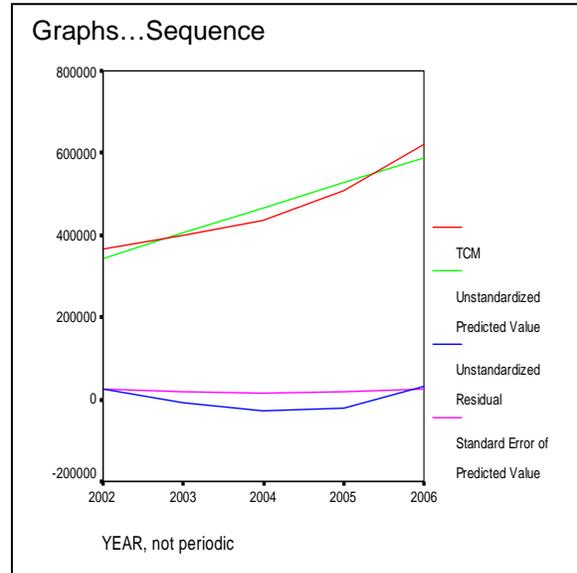
In the simple regression model, a functional dependence of the variable Y on the variable X is assumed, where Y is considered as a response, or output variable, while X is an explanatory or input variable with the variable  $\varepsilon$  being some "noise" contaminating the functional dependence. The magnitude of the output variable Y is dependent on the magnitude of the input variable X. This, however, does not mean that X is the only factor that is responsible for change in Y. All the other variables that may possibly influence the output (but which not accounted for) are thought of being lumped into the noise term. To make the model tractable, it is assumed that the noise variable is a random variable with zero mean.



For each value of  $X$ ,  $x_i$ , and correspondingly, each value of  $Y$ ,  $y_i$ , assume then that:

$$Y_i = \beta_0 + \beta_1 X_i + \varepsilon_i, i = 1, \dots, n,$$

where the noise terms  $\varepsilon_1, \dots, \varepsilon_n$  form a random sample from a normal distribution with zero mean and constant variance. Consequently, this will mean that the points of  $X$  and  $Y$  will be more-or-less evenly scattered around a line. The parameters  $\beta_0$  and  $\beta_1$  in the regression model respectively referred to as the intercept and the slope have to be estimated; the classical estimate, also called the (ordinary)



least squares estimates. The estimated regression line ought to be viewed as a “sample” regression line since the input data involve sample data. This line is the best fitting line for predicting  $Y$  for any value of  $X$ , in the sense of minimizing the distance (sum of the squares of the vertical distances) of the points to the line and the fitted line. Thus, the resulting coefficients, slope and intercept, in the sample regression line are also called the least squares estimates of the corresponding parameters of the population regression line).

The ANOVA table decomposes total variability into the variability explained by the regression model. The ratio of the squared variation due to the model to the residual mean, square forms the F-statistic; the p-value associated with the F-statistic can be used for testing the overall model adequacy.

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	37826303283.6	1	37826303283.7	39.56	.008(a)
	Residual	2868413764.8	3	956137921.6		
	Total	40694717048.5	4			

a Predictors: (Constant), YEAR, not periodic  
b Dependent Variable: TCM

An overall model fit involves testing the null hypothesis that  $X$  does not help in explaining  $Y$  against the alternative that the regression is adequate. The utility of the estimated regression line is not merely for explaining relationship between two variables  $X$  and  $Y$  but also making predictions on the variable  $Y$  given the value of  $X$ .

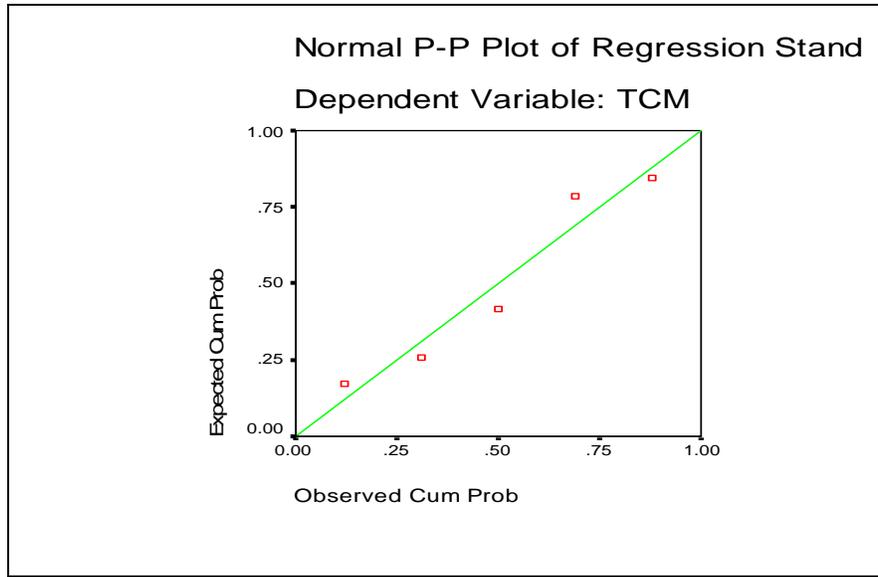
Moving from correlation to causation is often problematic as there are several possible explanations for a correlation between  $X$  and  $Y$  (excluding the possibility of chance). , it may be that  $X$  influences (or causes)  $Y$ ;  $Y$  influences  $X$ ; or both  $X$  and  $Y$  are influenced by some other variable.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.964(a)	.930	.906	30921.47994

a Predictors: (Constant), YEAR, not periodic  
b Dependent Variable: TCM

When performing correlation analysis of variables where there is no background knowledge or theory, inferring a causal link may not be necessarily justifiable regardless of the magnitude of the correlation.

There are a number of fundamental assumptions in the regression model. These include (a) the value of Y variable is composed of a linear function X and a noise variable; (b) the noise terms form a random sample with constant variance; (c) the noise distribution is a normal distribution. An analysis of residuals will help ascertain whether the assumptions of the regression model are tenable.

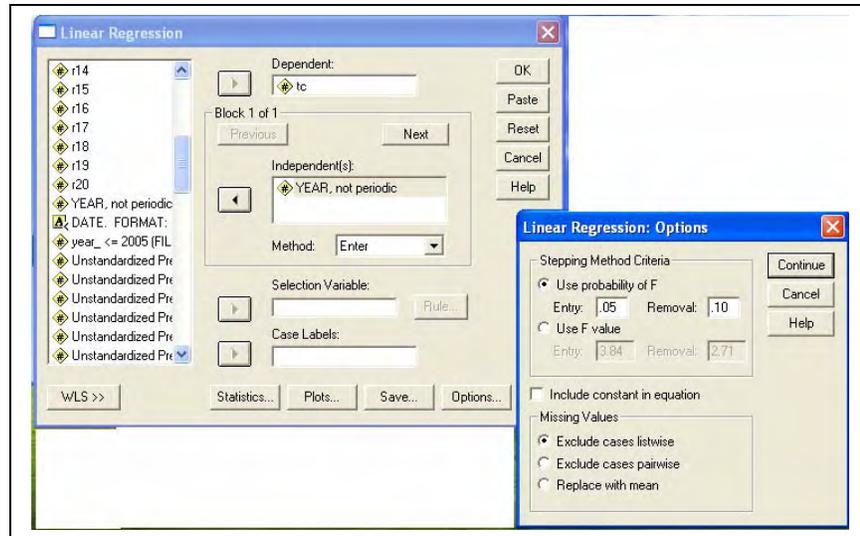


**3.2.2 Regression Trough the Origin (RTO).** In theory, the intercept of the regression line represents the value of Y when X is zero, but in practice, it may not necessarily have this interpretation. The intercept, if no zero is included in the data, merely represents the value for the estimated regression line if the line were to be extended to the point where X is zero. Note that the hypothesis test for performing the overall model fit is equivalent to the test of null hypothesis that the slope is zero, which is, in turn, also equivalent to the test of the null hypothesis that the correlation coefficient is zero. The only difference is that the statistic used for overall model fit (an F-statistic) is one-sided while the t-statistic for the slope (and the correlation) is two-sided.

Caution against dropping the constant term from a regression, on the grounds that imposing any such restriction can only diminish the model's fit to the data is the most common discussion on RTO. There are, however, circumstances in which RTO is appropriate or even necessary. First, RTO may be unavoidable if transformations of the OLS model are needed to correct violations of the Gauss–Markov assumptions (serial correlation and heteroscedasticity, in particular, see Eisenhauer, 2003). Second, even without such transformations, however, there are often strong a priori reasons for believing that  $Y = 0$  when  $x = 0$ , and therefore omitting the constant. From an economic point of view, a constant term usually has little or no explanatory virtues'. While that may be a slight exaggeration - it is easy to find examples in which an intercept does matter - there are certainly cases in which economic theory posits the absence of a constant.

With caution though, "if the data are from the origin, there is no evidence that linearity applies over this expanded range, as the response may increase exponentially near the origin and then stabilize into a near linear response in the region of the typical inputs" [Hocking, 1996]. Observations near the origin may also represent a discontinuity from otherwise linear function with a negative or positive intercept that justification for RTO is insufficient. Ideally, running a regression with and without an intercept could be used to compare a superior fit.

To implement RTO in SPSS, the same procedure for linear regression will be invoked but no constant in the model will be specified (in the options button).



As shown in the SPSS output's model summary, there is a disclaimer as a caution on the difference of running an RTO compared to a regular OLS regression. See Eisenhauer [2003] for the

Model	R	R Square(a)	Adjusted R Square	Std. Error of the Estimate
1	.982(b)	.964	.955	100510.05217

a For regression through the origin (the no-intercept model), R Square measures the proportion of the variability in the dependent variable about the origin explained by regression. This CANNOT be compared to R Square for models which include an intercept.  
 b Predictors: YEAR, not periodic  
 c Dependent Variable: TC  
 d Linear Regression through the Origin

computational basis of the results and comparison with that of using Excel and MINITAB.

**3.2.3 RTO as Adjustment on Historical Collection.** Aside from prospective transfer of taxpayer for the incoming year (which is subject to allocation) from one region to another, all other information on the behavior or trend in revenue collection are captured/contained in the annual figures. Hence, the provision on considering the fluctuations and non-recurring transactions in target setting would be addressed through simple regression through the origin (RTO) with respect to time.

Addressing the impact of change in pattern for the historical collection would roughly mean estimating the natural base during the years under consideration.

- To prepare collection data per region for CY 2002-06 for RTO:
- Transpose data such that the region is the column variable and the year is the row case
  - Copy and paste the data to the SPSS working file

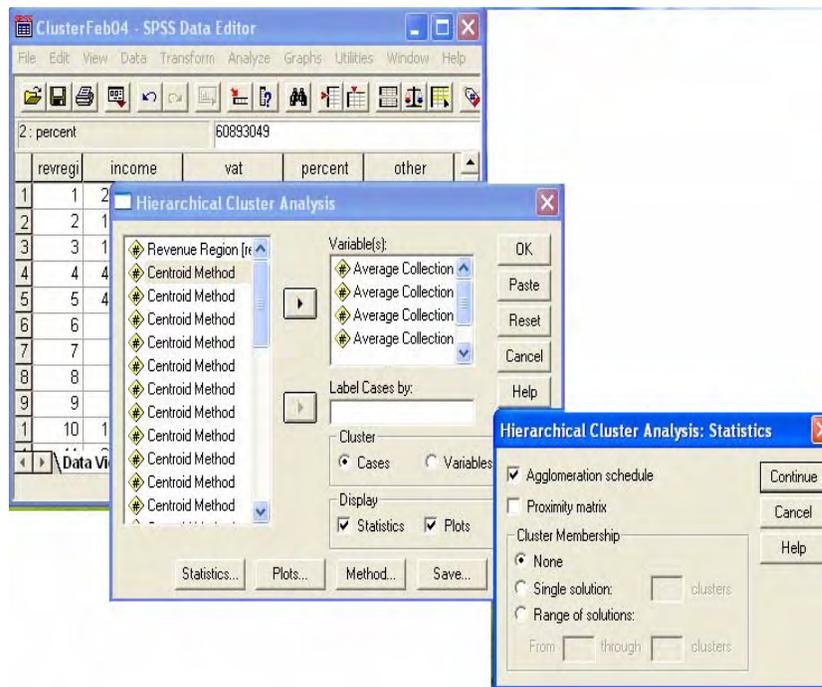
Statistically speaking, the regression line could be the estimate of the said natural growth of the tax base per revenue region. Likewise, as explained in the IRR of R. A. 9335, "Non-recurring transactions shall refer to one-time transactions which are substantial in amount i.e., the amount accounts for ten percent [10%] or more of a District's collections for a particular month.' Hence, if the collection is to be reckoned with respect of the district collection, transactions though may be in the list of non-recurring transaction for a particular taxpayer, it may not be non-recurring for a particular district (revenue region or district office) may regularly have such account annually.

### 3.3 Clustering of Regions as Data Classification Technique

#### 3.3.1 Use of Cluster Analysis. Cluster analysis is the name of group of multivariate techniques

whose primary purpose is to group objects based on the characteristics they possess. Cluster analysis classifies objects so that each object is very similar to other in cluster with respect to some predetermined selection criterion. The resulting cluster of objects should exhibit high internal (within-cluster) homogeneity and high external (between-cluster) heterogeneity. Thus, if the classification is successful, the objects within clusters will be close together when plotted geometrically, and different clusters will be far apart.

In cluster analysis, the concept of the variate is a central issue, but in a quite different way from other multivariate techniques. The cluster variate is the set of variables representing the characteristics used to compare objects in the cluster analysis. Because the cluster variate includes only the variables used to compare objects, it determines the "character" of the objects. Cluster analysis is the only multivariate technique that does not estimate the variate empirically but instead uses the variate as specified by the analyst. The focus of cluster analysis is on the comparison of objects based on the variate, not the estimation of the variate itself.

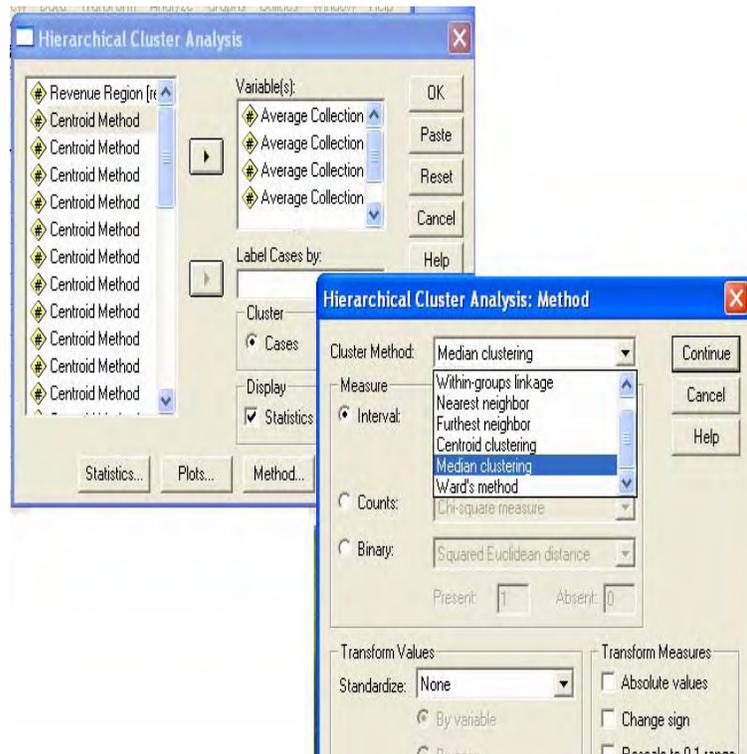


Cluster analysis has been referred to as Q analysis, topology, classification analysis and numerical taxonomy which reflect its usage in diverse disciplines. But the methods have a common dimension: classification according to natural relationships. This common dimension represents the value of cluster analysis in the classification of data, as suggested by the “natural groupings” of the data itself. Cluster analysis is comparable to factor analysis in its objective of assessing structure but it differs from the latter as it groups objects, while the latter is primarily concerned with grouping variables.

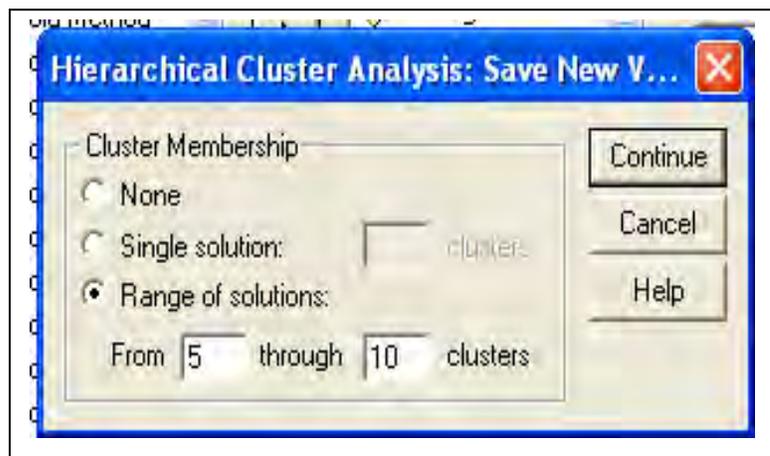
### 3.3.2 Assumptions of the Procedure.

Cluster Analysis, hierarchical clustering in particular, is not a statistical inference per se where parameters from a sample are assessed as possibly being representative of a population; instead, it is an objective methodology for quantifying structural characteristics of a set of observations that it has strong mathematical properties but not statistical foundations. Data analysis must focus on two critical issues: representativeness and multicollinearity. If multicollinearity is an issue in other multivariate techniques, in cluster analysis the effect is different

because those variables that are multicollinear are implicitly weighted more heavily.



Hierarchical procedures involve the construction of a hierarchy of a treelike structure in either agglomerative and or approach (two opposing approach, the former starts with individual clusters to achieve one hierarchy of cluster, the latter, starts with one hierarchy and splits into clusters). An important characteristic of hierarchical procedures is that the results at an earlier stage are always nested within the results in a later stage, causing its similarity to a tree (of which graphical display is referred to as a dendrogram). Range of solutions could be specified or only a single solution could be generated by the procedure as final output.



Five agglomerative procedures used to developed clusters are: (1) single linkage (minimum distance), (2) complete linkage, (3) average linkage, (4) Ward's method and (5) centroid (for at least version 11.5 of the SPSS software). The single linkage procedure is based on minimum distance from any point in once cluster to any point in the other. In contrasts, the complete linkage method is based on maximum distance that it is sometimes referred to as the furthest-neighbor approach or as a diameter method. In the same manner, the average linkage method starts with the cluster criterion of average distance from all individuals in one cluster to all individuals in another that it tend to combine clusters with

Agglomeration Schedule						
Stage	Cluster Combined		Coefficients	Stage Cluster First Appears		Next Stage
	Cluster 1	Cluster 2		Cluster 1	Cluster 2	
1	3	15	2518693081703638	0	0	5
2	10	18	35156829944729200	0	0	7
3	2	14	41450044645005050	0	0	8
4	11	16	56601516834746700	0	0	6
5	3	17	78185004979289700	1	0	11
6	1	11	163588638587188300	0	4	10
7	10	12	170973307491167900	2	0	8
8	2	10	246211292444251100	3	7	11
9	4	13	457606159790724000	0	0	12
10	1	19	490285595965426000	6	0	13
11	2	3	595618100407986000	8	5	13
12	4	5	1273971794120378000	9	0	14
13	1	2	1434019450129892000	10	11	14
14	1	4	8027467663274480000	13	12	17
15	6	9	24211274697672120000	0	0	17
16	7	8	68471470113089900000	0	0	18
17	1	6	192338484972589700000	14	15	18
18	1	7	929985582000346000000	17	16	19
19	1	20	17418714584336090000000	18	0	0

small variances. In Ward's method, the distance between two clusters is the sum of squares between two clusters summed over all variables, thus, tends to combine clusters with a small number of observations. Lastly, in the Centroid method, the distance between two clusters is the distance (typically squared Euclidean or simple Euclidian) between their centroids, which changes from time to time, hence, less affected by outliers compared to other hierarchical methods.

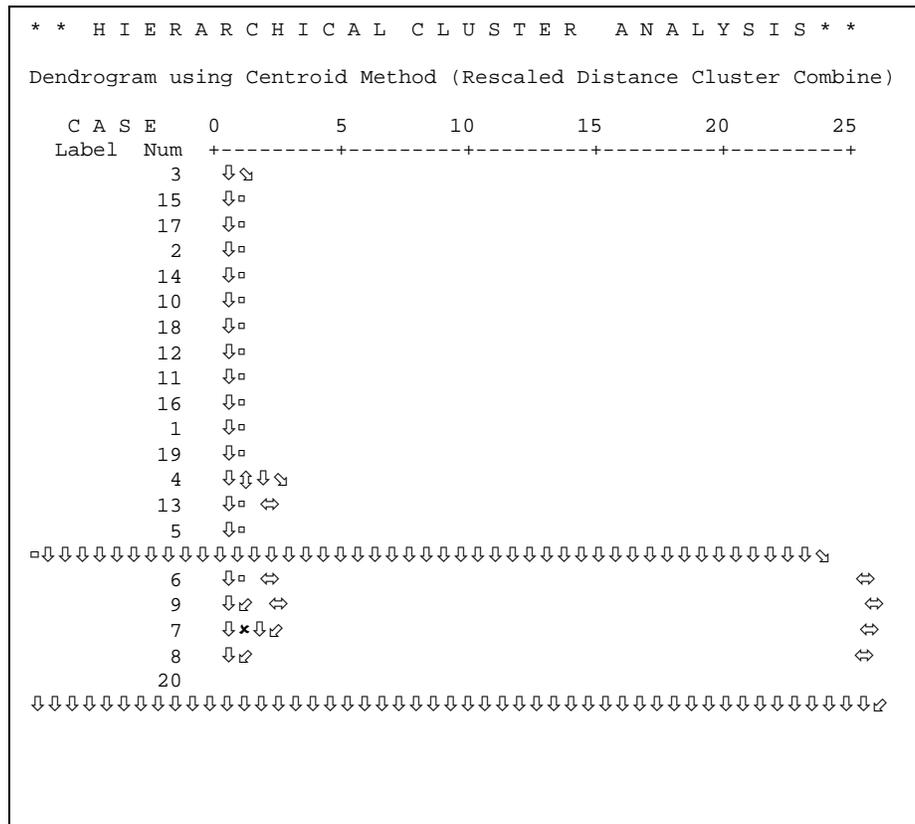
The issue with all clustering techniques being the best, or whether it should be hierarchical methods or otherwise, cannot be answered per se. A research problem at hand typically suggests one method or the other, and methods are evolving rapidly that future applications may suggest one over another. Clearly though, for the regional data, with presence of dominant regions, outlier data is a consideration. In another respect, a major issue with all the clustering techniques and/or method is how to select the number of clusters. Though there are many criteria and guidelines for approaching the problem, unfortunately, no standard, objective selection procedure exists. Some intuitive conceptualization of theoretical relationship may suggest a natural number of clusters. In final analysis, it is probably best to compute a number of difference cluster solutions then decide among the alternative solutions by using a priori criteria, practical judgment, common sense, or theoretical foundations. The cluster solutions will be improved by restricting the solution according to conceptual aspects of the problem.

		Horizontal Icicles																		
		No. of clusters																		
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
ANSI)	20	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
		X																		
	8	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
		X	X	X	X															
	7	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
		X	X																	
	9	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
		X	X	X	X	X														
	6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
		X	X	X																
	5	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
		X	X	X	X	X	X	X	X											
	13	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
		X	X	X	X	X	X	X	X	X	X	X								
	4	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
		X	X	X	X	X	X													
	17	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
	15	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
3	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
	X	X	X	X	X	X	X	X	X											
12	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
	X	X	X	X	X	X	X	X	X	X	X	X	X							
18	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
10	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
	X	X	X	X	X	X	X	X	X	X	X	X								
14	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
	X	X	X	X	X	X	X													
19	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
	X	X	X	X	X	X	X	X	X	X										
16	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
11	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
	X	X	X	X	X	X	X	X	X	X	X	X	X	X						
1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	

Interpretation and validation of the resulting cluster is also a part of the exercise. The first is performed if labeling and/or profiling of the defined cluster is of importance (not in this case). Similarly, the latter is conducted from confirmatory evidence using cluster analysis of split-sample or resample data or discriminant analysis based on some criteria variables. Though it would help in this case, split data or resample data is not applicable in this case, in the same manner that criteria to evaluate cluster assignment are not available (for now). Hence, the agency experience is more important in the number and or cluster assignment.

Cluster Membership						
Case	10 Clusters	9 Clusters	8 Clusters	7 Clusters	6 Clusters	5 Clusters
1	1	1	1	1	1	1
2	2	2	2	1	1	1
3	3	2	2	1	1	1
4	4	3	3	2	1	1
5	5	4	3	2	1	1
6	6	5	4	3	2	2
7	7	6	5	4	3	3
8	8	7	6	5	4	4
9	9	8	7	6	5	2
10	2	2	2	1	1	1
11	1	1	1	1	1	1
12	2	2	2	1	1	1
13	4	3	3	2	1	1
14	2	2	2	1	1	1
15	3	2	2	1	1	1
16	1	1	1	1	1	1
17	3	2	2	1	1	1
18	2	2	2	1	1	1
19	1	1	1	1	1	1
20	10	9	8	7	6	5

To illustrate clustering exercise, the average collection per major tax type during the period CY 2002-06 was utilized in the outputs shown, namely: (a) Taxes from Net Income and Profit, (b) Value-added Taxes, (c) Percentage Taxes, and (d) Other Taxes. Inasmuch as the Special Taxes (Excise Taxes, Taxes from T-Bills, Taxes from Stock Transactions, and Travel Taxes) were directly assigned to a specific region and/or office, it did not form part of the clustering variables used.



### **3.4 Exercises on Goal Allocation**

#### **3.4.1 Goal Allocation Using RTO**

1. Open the data file containing the annual summary of revenue collection per region generated from the GFS12.09 Report in wherein the collection from non-BIR operations are netted out.
2. Prepare the regional data for adjustment via RTO by transposing the rows (region) as columns (year) and copy paste to SPSS Data Editor. Perform RTO by region and specify to save the predicted values per year in each region.
3. Copy the annual predicted values per region to the Excel working file. Transpose the annual predicted values per region.
4. Generate the adjustment band using 10% of the monthly average of the predicted values.
5. Compare the original value against the generated confidence band using the trichotomy rule to come up with the adjusted figure.
6. Compute the annual share per region using the annual sub-total (net of special taxes and/or non-BIR operations) as denominator for each value for the region in each of the applicable year.
7. Determine the year-over-year change or growth in the adjusted collection per region including for the sub-total.
8. Derive the contribution to growth per comparative period. Compute for the average of the contribution to growth as basis for the final allocation coefficients.
9. Compute for the tentative regional allocation. Perform refinements (prospective transfers, etc) such that the total for all regions will be equal to the sub-total goal for allocation (BIR-operations).
10. Derive the allocation coefficients for district level using average share based on adjusted figure generated via RTO.
11. Compute for the district office allocation such that the total for all RDOs will be equal to the total for the goal for allocation (from BIR operations) and that total for all districts per region is equal to the regional allocation previously computed/allocated.

#### **3.4.2 Goal Allocation With Clustering By Region**

1. Open the data file containing the annual summary of revenue collection per revenue type by region generated from the GFS12.09 Report in wherein the collection from non-BIR operations are netted out. Compute for the average for each revenue type.
2. Perform cluster analysis using the SPSS software. Examine the resulting cluster assignments and make the necessary adjustments based on agency experience or other prospective scenario relevant to the year of allocation.

3. Generate the per cluster sub-totals for every collection data.
4. Derive the contribution to growth per cluster.
5. Allocate the sub-total goal for allocation (net of goal from non-BIR operations) per cluster.
6. Compute the per region share in each cluster, as applicable, using average share of each region in a cluster.
7. Allocate the regional share on goal to the district offices using average share of each district in a region.

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