

**Philippines – Australia  
Land Administration and Management  
Project**

**Financial Model for Assessment  
Of Policy Reform Options**

**FINAL VERSION  
REPORT A5  
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## Abbreviations and Acronyms

<b>BIR</b>	Bureau of Internal Revenue
<b>BLGF</b>	Bureau of Local Government Finance
<b>CAA</b>	Central Appraisals Authority (Proposed New Authority)
<b>CARP</b>	Comprehensive Agrarian Reform Program
<b>CGT</b>	Capital Gains Tax
<b>DAR</b>	Department of Agrarian Reform
<b>DENR</b>	Department of Environment and Natural Resources
<b>DST</b>	Documentary Stamp Tax
<b>GDP</b>	Gross Domestic Product
<b>IRA</b>	Internal Revenue Allotment
<b>LAA</b>	Land Administration Authority (Proposed New Authority)
<b>LAMP</b>	Land Administration Management Project
<b>LGU</b>	Local Government Unit
<b>LMB</b>	Land Management Bureau
<b>LMS</b>	Land Management Services
<b>LRA</b>	Land Registration Authority
<b>NAMRIA</b>	National Mapping and Resource Information Authority
<b>NCIP</b>	National Commission for Indigenous People
<b>ROD</b>	Registry of Deeds
<b>RPT</b>	Real Property Tax
<b>SEF</b>	Special Education Fund
<b>TOR</b>	Terms of Reference
<b>VAT</b>	Value Added Tax

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## **Table of Contents**

Abbreviations and Acronyms.....	i
List of Tables .....	iii
Executive Summary.....	iv
1. Introduction.....	1
2. Model Structure .....	3
2.1 Overview of Model Design.....	3
2.2 Elements / Assumptions Common to all Options.....	5
2.3 Elements / Assumptions Providing for Sensitivity Analysis.....	8
2.4 Presentation of Model Results.....	10
2.5 What the Model Does not Cover.....	11
3. Characteristics of the Preferred Long Term Option 1.....	12
4. Run Results for Option 1 .....	14
4.1 Presentation of the Results.....	14
4.2 Further Sensitivity Analysis in Relation to Option 1 Results .....	23
5. Comparison of Results for Options 1, 2 and 3 .....	25
6. Conclusions.....	29
Appendix 1. Data Base Table.....	31
Appendix 2. Characteristics and Run Results for Option 2 .....	40
Appendix 3. Characteristics and Run Results for Option 3 .....	50
Appendix 4. Model User’s Operational Guide .....	60

## List of Tables

1. Policy Variables for Base Case of Option 1	13
2. Option 1. Total Revenues, Actual and Simulated, 95 – 01	15
3. Option 1. National and Local Revenues, Actual & Simulated, 95 – 01	16
4. Option 1. Simulated Revenues as % of Actual Revenues, 95 – 01	17
5. Option 1. Total Expenditures, Actual and Simulated, 95 – 01	18
6. Option 1. National & Local Expenditure, Actual and Simulated, 95 – 01	19
7. Option 1. Disaggregated Expenditure, Actual & Simulated, 95 – 01	20
8. Option 1. Total Fiscal Surpluses, Actual and Simulated, 95 – 01	21
9. Option 1. National and Local Surpluses, Actual & Simulated, 95 – 01	22
10. Revenue Effects for the Three Simulated Cases	26
11. Expenditure Effects for the Three Simulated Cases	27
12. Surpluses for the Three Simulated Cases	28
13. Historical Data Base	31
14. Policy Variables for Base Case of Option 2	41
15. Option 2. Total Revenues, Actual and Simulated, 95 – 01	42
16. Option 2. National and Local Revenues, Actual & Simulated, 95 – 01	43
17. Option 2. Simulated Revenues as % of Actual Revenues, 95 – 01	44
18. Option 2. Total Expenditures, Actual and Simulated, 95 – 01	45
19. Option 2. National & Local Expenditure, Actual and Simulated, 95 – 01	46
20. Option 2. Disaggregated Expenditure, Actual & Simulated, 95 – 01	47
21. Option 2. Total Fiscal Surpluses, Actual and Simulated, 95 – 01	48
22. Option 2. National and Local Surpluses, Actual & Simulated, 95 – 01	49
23. Policy Variables for Base Case of Option 3	51
24. Option 3. Total Revenues, Actual and Simulated, 95 – 01	52
25. Option 3. National and Local Revenues, Actual & Simulated, 95 – 01	53
26. Option 3. Simulated Revenues as % of Actual Revenues, 95 – 01	54
27. Option 3. Total Expenditures, Actual and Simulated, 95 – 01	55
28. Option 3. National & Local Expenditure, Actual and Simulated, 95 – 01	56
29. Option 3. Disaggregated Expenditure, Actual & Simulated, 95 – 01	57
30. Option 3. Total Fiscal Surpluses, Actual and Simulated, 95 – 01	58
31. Option 3. National and Local Surpluses, Actual & Simulated, 95 – 01	59

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## **Executive Summary**

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Chapter 1. Introduction This chapter sets out requirements of the TOR and objectives for the assignment. The main aim was to build and get operational a fiscal model to allow assessment of the fiscal implications of various policy reform options for the land administration reform project. In particular three options developed under the July 2002 Finance and Fees Study were to be modeled and compared. These runs were also to take account of fiscal effects of major initiatives coming from the Valuation, Institutional and Legal Policy Studies.

Chapter 2. Model Structure This chapter outlines structural features of the model which has been designed. The model has been designed as an EXCEL spreadsheet. Its starting point is a data base of actual fiscal information covering the period 1995 to 2001. Data is divided into nine distinct modules covering all of the key public institutions involved in land administration. Particular policy initiatives can be phased over different years of the seven years covered. In general it was assumed that all phasing in of new initiatives is completed by the end of year five (1999). This means that the final two years simulated (2000 and 2001) can be regarded as years when full effects of policy reforms can be studied.

From the starting point of the actual data base, policy changes are then introduced in two ways: (a) a set of policy changes determined to be common for all options assessed (section 2.2); and (b) a set of thirteen (13) choice variables that can be changed for every run (section 2.3). For most users the only information that needs to be entered for each run are the selections for each of the thirteen choice variables. Once these have been entered the model automatically simulates a revised data base for 1995 to 2001 and provides eight (8) standard results reports each of which provide a table and graphs comparing the simulated results with the actual data base. These results sheets cover the basic fiscal areas of: (a) revenues; (b) expenditures; and (c) net fiscal outcome.

Chapter 3. Characteristics of Preferred Long Term Option 1. This chapter sets out the main features of the preferred Option 1. This option contains all of the policy change initiatives that are common to all option runs (as set out at section 2.2). It also makes specific choices in relation to the thirteen choice variables (the choices selected for this option run are set out in Table 1). In essence the characteristics of preferred long term Option 1 correspond to the recommendations contained in the Finance and Fees Report. They involve the modeling of a range of revenue and expenditure implications that flow from the

four policy studies and the Integration Report. These changes have impacts on institutional, legal, valuation and finance / fees aspects of land administration in the Philippines.

Chapter 4. Run Results for Option 1. This chapter presents the results of running the model for preferred Option 1. Results are presented in the form of the eight standard results reports (with standard tables and graphs) which the model is able to automatically develop once policy choice variable have been selected. Some further sensitivity analysis within Option 1 is also undertaken with the results presented. The results sheets present results in a comprehensive way and they should be referred to. While this option has good long term prospects of achieving important structural reform to the Philippines economy, it also has short term fiscal costs to the Government and especially the National Government, which would need to see very high growth levels in land related revenues for it to break even. The option is more favorable for the Local Governments with only modest related growth needed for them to be in a better fiscal situation. For the whole of Government (National + Local) the risks associated with a worst case outcome (i.e. when no related growth in land revenues is generated), is acceptable at around 0.26% of GDP per year over the first seven years. This represents a manageable risk level in relation to potentially high gains to GDP and employment growth from improved structural arrangements for land, construction and private sector development. Failure to take decisive steps in the property and related financial and private markets have been key reasons that the Philippines economy has floundered since 1996. Bolder steps are needed.

Chapter 5. Comparison of Results for Options 1, 2 and 3. As well as the preferred Option 1, runs were also undertaken of Options 2 and 3 as defined in the Finance and Fees Report. Results of runs for Options 2 and 3 are presented as Appendices 2 and 3 respectively. Comparison of the three options provides support to Option one as being the most suitable option for the Philippines at the moment. The results sheets present findings in a comprehensive way and they should be referred to. Option 3 can be ruled out because it involves an inappropriate reassignment of taxes that are widely regarded as most suited to local governments. Option 3 also involves significant fiscal costs, especially for local governments. Option 2 has some short term appeal. Because Option 2 provides for little change, as a result it also costs little. However, it is only a short term proposition and will not significantly help solve the structural problems holding back the property and construction sectors of the economy. As noted above Option 2 (like virtually all structural reforms with any merit) involves some short term fiscal costs and modest risks, but has the best prospects of addressing structural impediments to getting the property market, construction and the private economy going. For this reason it has been presented as the preferred longer term option.

Chapter 6. Conclusions. The model has been built and is operational. Copies of the model have been distributed to relevant project personnel and members of the Finance and Fees Interagency Group. Required Option runs have been undertaken and results provided in this Report. The conclusions set out an assessment of the reliability of assumptions and estimates used in construction of the model. Some difficulties with aspects of available data are outlined. Particular difficulties in estimating levels of growth that the policy and project initiatives will generate are outlined. Notwithstanding the difficulties, many of which can be addressed over time, the broad conclusion is that the model should present reliable fiscal results to assist in future decision making. The initial runs provide support and backing to the preferred long term Option 1.

Annex 1. Data Base Table. This annex provides the full data base, 1995 – 2001. Notes documenting sources of data and estimation techniques used are provided.

Annex 2. Characteristics and Run Results for Option 2. The main characteristics and eight standard results sheets are presented for the Option 2 run.

Annex 3. Characteristics and Run Results for Option 3. The main characteristics and eight standard results sheets are presented for the Option 3 run.

Annex 4. Model Users Operational Guide. A short operational guide is presented. The model is quite user friendly for those with only a basic understanding of EXCEL; providing all requirements of a particular run can be addressed through the policy choice selection box. Where completely new policy initiatives need to be introduced or where current structural features need to change, somewhat more advanced EXCEL skills will be required, but even here change should not be too difficult.

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## 1. Introduction

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This Report addresses the Terms of Reference (TOR) for the second project assignment of one month (from mid July 2002 to mid August 2002) of the International Finance and Fees Adviser to the Philippines – Australia Land Administration and Management Project.

The second project assignment is described in the TOR of 1 July 2002 as the integrating phase during which time a financial model would be developed, enabling the evaluation of various policy scenarios. The TOR also indicated that the work of the second assignment would follow on closely from the Finance and Fees Report of 6 July 2002 which was completed as part of the first assignment.

The TOR further detailed tasks, outputs and timelines for completion in the second assignment as follows:

- “The task is to prepare a financial model based on the project’s Finance and Fees Report of 6 July 2002 and the accompanying research data. The objective is to provide support for the reform package of the integrating report demonstrating the true financial position of the proposed reform measures as compared to the existing situation;
- The model will be set up such that the base costs of the land administration sector are included, the revenues to Government of both service fees and taxes are also included, and parameters are adjustable so that various scenarios can be evaluated;
- The current situation will be documented as well as the main options from the Finance and Fees Study. Any other option required by the Integration Team (led by the Institutional Adviser) during the period of the assignment will be evaluated; and
- A final report on the model and the finance cash flows will be provided. It will show major assumptions and sources of error and give some statement on the degree of confidence in the information”.

By agreement a draft of the model and report was to be completed by 9 August with any agreed suggestions for change incorporated before conclusion of the assignment on 14 August.

All elements of the TOR have been addressed. The financial model has been developed and is operational. Disc copies with operating instructions have been provided to the Project Head Office as well as to all members of the Government of the Philippines Interagency Group for the Fees and Finance Study. Copies of this Report have been similarly distributed.

As required this Report sets out details of the model's structure and results of the three main scenarios evaluated (though with some emphasis on the preferred long term option). Operating instructions provide guidance as to how further scenarios could be evaluated in the future if required. The conclusions address issues regarding the soundness of assumptions, errors and the reliability of results. The chapters of this Report which now follow are:

2. Model Structure

3. Characteristics of Preferred Long Term Option (1)

4. Run Results for Preferred Long Term Option (1)

5. Comparison of Results for Options 1, 2 and 3

6. Conclusions

Appendix 1. Data Base Table

Appendix 2. Characteristics and Run Results for Option 2

Appendix 3. Characteristics and Run Results for Option 3

Appendix 4. Model User's Operational Guide

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## 2. Model Structure

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### 2.1 Overview of Model Design

Model design has closely followed requirements of the TOR. Important objectives that were established in relation to design were:

- to better understand past trends (1995 – 2001) in land administration related finances;
- to document and quantify the financial implications of all major policy changes / options proposed in the 4 policy studies (and the forthcoming Integration Report);
- to simulate what would have happened 1995 – 2001 had particular reform packages been implemented (analysis of financial costs and benefits);
- to provide a tool for future policy work, including possible review of additional policy scenarios; and
- to make the model as practical and user friendly as possible so that it can provide a useful tool for future policy analysis by both the Project Team and the Government of the Philippines.

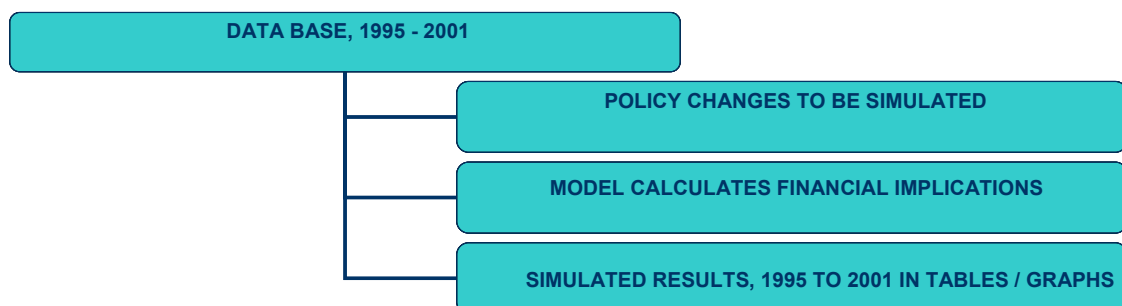
As set out more fully in Annex 4 the model has been designed as an EXCEL spreadsheet and individual options can be run in a single file in which a number of work sheets are linked. The basic structure of the model is set out in the diagram in Figure 1. Core elements of the structure are as follows:

- the starting point of the model is an underlying data base which provides historical data on what actually happened financially, 1995 – 2001. The data base focuses on financial implications of policies for Government (Revenues; Expenditures; Financing). The data base table in the model is reproduced as Appendix 1 to this Report;
- the data presented divides Government up into nine distinct modules: (i) Local Government Units (LGU); (ii) Land Registration Authority (LRA); (iii) Department of Environment and Natural Resources [Land Management Bureau / Service and National Mapping] (DENR, LMB, LMS and NAMRIA); (iv) Department of Agrarian Reform (DAR); (v) the Judiciary;

(vi) National Commission on Indigenous People (NCIP); (vii) Bureau of Internal Revenue (BIR); (viii) Proposed new Land Administration Authority [with Appraisal Supervision Function] (LAA); and (ix) National Consolidation;

- the model's structure is composed of (i) various policy elements that remain common to all policy options evaluated; and (ii) various policy choice elements (sensitivity analysis) that can be introduced and changed in line with different options / scenarios of the policy studies. These two features of structure, including underlying assumptions and approaches taken are more fully set out in sections 2.2 and 2.3 below;
- the model then simulates the financial implications of different policy scenarios and presents results in tables and graphs with emphasis on comparing what actually happened 1995 to 2001 with what would have happened had particular policy change scenarios been in place over that period. Section 2.4 provides more detailed comments on the way in which results are treated;
- in developing the model there were two options as to how to treat phasing of new policy initiatives over time. One option was to simulate as though all policy reforms had been fully implemented for all 7 years, 1995 to 2001. Another option was to simulate phasing of different parts of the reforms over the 7 years simulated (for example by assuming that some reforms would be implemented fully in simulated year 1 (1995), while others would take progressive effect over years 1 to 7 (1995 to 2001). On balance the latter approach was thought to be more appropriate in the current exercise, as many of the reforms are expected to take impact in different years. Accordingly, this approach was taken in model development; and
- with regard to the treatment of money values over time it was decided that all Peso numbers would be presented in nominal values of the year in question. Where particular numbers / estimates needed to be deflated or escalated (either in the model or in the analysis of results) the GDP Deflator for Public Services 1995 to 2002 was used.

**Figure 1: Overview of Model Structure**



## **2.2 Elements / Assumptions Common to all Options**

As the TOR requires reporting on the nature and reliability of assumptions that underlie the model this section spends some time setting out the basic elements and assumptions that are common to all three policy options evaluated. Section 2.3 then sets out the policy variables that can be subjected to sensitivity analysis. The main elements and assumptions common to all scenarios were:

Estate Tax. Estate tax remains in place with rates unchanged.

Donors Tax. Donors' tax remains in place with rates unchanged.

Idle Lands Tax. Idle lands tax is piloted in one LAMP pilot location, but negligible additional revenues are assumed over the seven years of the simulation (0.5% p.a. growth in collections from this tax).

Special Levies Following Public Works. Special levies following public works remain in place with no change in the basis of levy calculation.

VAT on Land Transactions. VAT on land transactions remains in place with rates unchanged.

Income Tax on Land Transactions. Income tax on land transactions (for real estate professionals) remains in place with rates unchanged.

Revenues from Forfeited Property Sales. Following implementation of management and incentives reforms annual growth of 6% p.a. in revenues received from forfeited property sales is allowed from years three to seven of the simulation. No change is provided for in years one and two.

IRA Grants from National Government to Local Government Units. Longer term policy review of the system of IRA transfers is proposed in the Finance and Fees Study. However, it is assumed that there are no changes to the existing IRA Grants system during the full seven years of the simulation. While no changes to the existing formulae or systems are proposed it should be noted that some of the tax policy changes reviewed under some options will have an impact on amounts of IRA Grants transferred from the National Government to LGUs. This is because a number of key taxes on which reform is proposed (particularly Capital Gains and Documentary Stamp Taxes) form part of the internal revenue base on which the IRA Grant is calculated. Most taxes are effectively shared 60 / 40 between central and local government. Thus if it is proposed to eliminate or reduce a particular tax which forms part of the domestic revenue base then the costs will be shared 60 / 40 between the National and Local Governments. This tax sharing feature is provided for in the model. As a further complication the effect of sharing on Local Government IRA receipts is lagged by three years in line with the IRA formula. Thus the National Government bears 100 % of any lost

revenues for the first three years while from year four they are split 60 / 40 between national and local levels on a lagged basis.

Amalgamation of Existing Bodies into New Land Administration Authority (LAA)

The rationalization program to amalgamate LMB; NAMRIA; LRA/ROD into LAA is assumed to take two years to complete. Initial restructuring / retrenchment occurs in year 2. It is assumed downsizing is achieved by attrition with no upfront costs, with establishment requirements being met by physical transfers from existing organizations. Ongoing efficiency costs from year 3 are estimated at P 227 million p.a. (2002 values). This is comprised of P 54.6 million p.a. from LRA, P 100.0 million p.a. from LMB / LMS (including matters relating to CARP registration related activities); P 44.1 million from NAMRIA and P 28.3 millions from overheads of Secretaries' Offices in DENR. Note that the proposed replacement of judicial titling procedures with administrative approaches has implications for the finances of the new LAA. These implications are covered below under judicial implications.

Rationalize Fees Structure of Central Government Agencies. Policy reforms propose a review and rationalization of fees structures. This restructure is assumed to take one year to plan with implementation from year two. With the exception of the newly proposed LAA (covered separately below) fees of all other relevant organizations are assumed to grow 30% in the first year of implementation and thereafter at the rate of Consumer Price Inflation. The 30% increase in fees collection is based on review recommendations in the Finance and Fees Study. LAA is treated separately in that most future fees income will relate to fees taken over from the LRA. The Finance and Fees study concluded that fees received by the LRA may be excessive and warrant further review after LAA is established. Accordingly, it is assumed that fees taken over from LRA will not be escalated during the seven years of the simulation. However, minor fees taken over from other bodies (NAMRIA and LMB) are allowed to grow by 30% in year two and thereafter at the rate of Consumer Price Inflation. There is also uncertainty as to whether LRA (and ultimately LAA) will proceed to raise fees to fund a BOOT project to acquire a new computer system. Because of the uncertainties no provision is made for this. Rather it is assumed that any future funding of computerization through a levy on fees will be revenue neutral for the National budget.

Judiciary. Proposed legal and administrative reforms are assumed to see abolition of judicial proceedings for titling and other matters. Two years will be taken to undertake planning and to pass the necessary legislation with reforms starting to phase in from year three and being fully in place by the end of year 5. Main financial implications of the movement to administrative titling are:

**P (m – 2002 Values)**

Judiciary saves 15.0 % of operating costs	(1024.0)
LAA incurs additional administrative costs (70%)	686.7
LAA redeploys 300 involved in court work	(57.0)
 Net Savings	 394.3

The model (2002 values) records full year savings of P 1,024.0 million against the Judiciary and net additional full year costs of P 629.7 million against the LAA. These changes are phased in 25% in year 3, 50% in year 4, 75% in year 5 and 100% in years 6 and 7.

Establish New Central Appraisal Authority. The policy proposal to establish a new Central Appraisal Authority [CAA] (most probably as part of the new LAA) is assumed to take one year to plan and to then build up over the next two years (50 staff in year two, 200 staff in year three and beyond). However, only fifty of the new staff are directly paid for from the budget with the remaining 150 assumed to be transferred from other duties in the BLGF and from the Regional Valuations Unit of the BIR which will no longer function under the reform proposals. Total operating costs for the newly employed 50 staff are estimated at P 300,000 per employee (2002 values). Establishment costs are estimated as P 50,000 per for each of the new 50 employees, all incurred in year 2. Unit costs are based on current BLGF costs.

Rationalization of Local Government Assessors. The rationalization program is assumed to take two years to plan and complete. Initial restructuring and retrenchment occurs in year 2. Ongoing efficiency savings to Local Governments from year 3 are estimated at P 136.6 million p.a., based on estimated cost savings of P 122,000 per Assessor (both in 2002 values).

Establish University and Tertiary Courses for Valuers. The valuation study made recommendations for consideration of longer term funding of University and other tertiary courses for Valuers and Assessors. It is possible these courses will be arranged on a self funding basis. Because of the uncertainties no direct provision is made at this time.

Study on Expansion of Computerization for Valuers. It is proposed to conduct a study with a view to expanding access to computer hardware and software for valuers. It is assumed this study will occur in year 2 at a cost of P 3 million (1996 values). Due to uncertainties no provision whatever is made for future costs of implementation. Study costs are allocated to the new Central Appraisal Unit as a central project initiative.

Public Awareness Campaign to Promote Valuation Reforms. Provision is made for the new Central Appraisal Unit to conduct public awareness campaigns to

promote valuation reforms. These are assumed to occur in years 2 to 7 with a cost provision of P 2 million per year (2002 values).

Net Benefits of Valuation Reforms to Public Agencies Using Assessed Values.

The Valuation Policy Study projects that there may be significant net benefits from valuation reforms through their effects on approximately 29 Public Agencies. Some financial effects will be negative (compensation payments) while some will be positive (rentals, sales, fees). Further study is needed to more precisely determine what net benefits might flow to the public sector from such effects. Until such study proceeds no estimates are recorded against this item.

Department of Agrarian Reform. No significant policy proposals apply to DAR and thus no tangible revenue or expenditure implications are recorded for DAR.

National Commission on Indigenous People. No significant policy proposals apply to NCIP and thus no tangible revenue or expenditure implications are recorded for NCIP.

### **2.3 Elements / Assumptions Providing for Sensitivity Analysis**

The model allows sensitivity analysis in relation to the following:

- Elasticity levels to apply to rising or falling tax rates;
- Capital Gains Tax;
- Stamp Tax on Documents;
- Transfer Tax – Cities / Metro Manila;
- Transfer Tax – Non Cities;
- Real Property Tax – Cities / Metro Manila;
- Real Property Tax – Non Cities;
- Special Education Fund Tax;
- Growth (%) in National fees and charges following proposed fees review;
- Growth (%) in Local Government fees and charges following proposed review;
- Growth in revenues due to effects of higher valuations flowing from proposed institutional / administrative reforms;
- Growth in ownership revenues due to effects from growth in titles and transactions; and
- Growth in transactions revenues due to effects from growth in titles and transactions.

Most of the above policy variables are straightforward in nature and for most only require the user to make simple choices as to which tax rates and elasticity's to choose for particular years before then running the model. However, three areas above warrant further comment and notes on each of these now follow.

#### Treatment of Changes (Rises and Falls) in Tax Rates (Elasticity Assumptions).

The model allows the user to enter assumptions about elasticity's to apply in the event of particular tax rates rising or falling. The following assumptions have been used in running all options presented in this report:

- When a tax rate rises then it is assumed only 85 percent of the proportional increase is collected (i.e. that there is resistance to paying the higher rate); and
- When a tax rate falls then it is assumed there is a 100 percent of proportional decrease in collections (i.e. that there is no improvement in willingness to pay at the lower rate).

These assumptions provide for a relatively conservative approach to estimation of effects of rising or falling tax rates.

Treatment of Revenue Growth from Valuation Effects. In the base case valuation effects are estimated to commence in year 3, when there will be a 10 % increase; rising to 20 % in year 4 and peaking at 30 % in years 5, 6 and 7. The full valuation potential is thus defined in the base case as an effective 30 percent increase in values and revenues (Note that the model provides flexibility to run lower or higher cases, including a zero valuation effect case). The Valuation Policy Report estimates that proper approaches to valuation in recent years (and notwithstanding the property downturn) would have seen increases in values of between 80% and 120%. Bearing in mind likely problems in implementation and political and economic resistance to higher levels, the base case has been set as a much lower potential rise (over time) of 30% in both values and revenues.

Treatment of Revenue Growth from Titling / Transactions Growth Effects. This element allows for growth in revenues due to effects from growth in titles and transactions. Growth in titles and transactions are seen as being related to:

- improved service delivery and efficiency following institutional reforms (+);
- improved legal / administrative arrangements and efficiency, including mass titling (+);
- lower fees and charges providing economic incentives (+); and
- higher valuation effects providing economic disincentives (-).

In the base case titling / transactions growth effects are estimated to commence in year 3, when there will be a 3.3 % increase; rising to 6.6 % in year 4, and peaking at 10% in years 5, 6 and 7. The full growth potential is thus defined in the base case as an effective 10 percent p.a. increase in revenues. It is estimated that most of these revenue benefits will flow from raising formal

transactions levels and thus will mainly impact the transactions type taxes; i.e: (a) CGT; (b) Transfer Tax ; (c) Stamp Tax; and (d) Transaction Fees. However, it is also considered that increased formalization along with improved productivity will have some growth impact on other property related taxes, particularly RPT; SEF; VAT; and Income Tax. Effects on these taxes are estimated as being only 1% in year 3; 2% in year 4; and peaking at 3% in years 5, 6; and 7.

The model will provide flexibility to run lower or higher cases, including a zero effect case. The above levels are those used for the base case. The growth variables are difficult to estimate precisely as there is little past history of effective land administration reform in the Philippines on which it can be based. Judgement is needed. It is considered that the growth rates provided for in the base case used in the model are relatively conservative for the following reasons:

- all of the policy studies and recommendations (indeed the project as a whole) have as a core aim increasing growth in titles and transactions (and thus revenues);
- the base data in the Philippines suggest a very major gap between what is currently titled and transacted in the formal market place and what is not. The wide gap indicates that volume growth of up to 10% p.a. over the next 10 years would still leave the gap between formal and informal at very wide levels; and
- relevant international experience in growth is enlightening. The Thailand data is particularly appropriate in the Philippines context. It indicates that in the six years (to 1990) after commencement of a major land administration reform project in the early 1980s there was annual real compound growth in land related revenues of 42.2 % p.a. This was around 35 % p.a. in advance of real GDP growth. Most of this growth was related to titling and administrative efficiency effects as fees and tax levels did not change significantly over the period.

## **2.4 Presentation of Model Results**

The model is designed to allow automatic presentation of the results of different policy runs. Standard results reports are presented in graphs and variance tables. The main emphasis is on comparing financial costs and benefits of: (a) what actually happened 1995 – 2001; and (b) what would have happened over the same period had policy changed in line with particular options simulated. Detailed presentation of the results of Options 1, 2 and 3 are set out in chapter 4 and Appendices 3 and 4 respectively of this Report. Chapter 5 provides a comparison of results between options 1, 2 and 3.

## 2.5 What the Model Does not Cover

The focus in the model is on likely fiscal impacts on the National and Local budgets of recommendations of the four main policy studies. Because later stages of the AusAID LAMP project and the World Bank LAMP project have not yet been fully designed it is likely that all future project related expenditures have not yet been included. Emphasis on modeling to date has been on matters directly referred to in the policy studies. Until more detailed project preparation work occurs all such expenditures cannot be precisely identified or estimated.

Furthermore as required under the TOR the model only captures the financial implications of policy reforms on the fiscal affairs of National and Local Governments. Notwithstanding this there are likely to be broader implications. In particular it should be noted that the current approach excludes the following:

- Impacts on private individuals and enterprises are not specifically captured (e.g. time and cost savings of particular reforms). It would be difficult to do this comprehensively without further survey work though it would be relatively easy to construct case studies / examples of the likely qualitative and quantitative effects on different types of families or firms. Further work in this area may occur during the third stage of the assignment; and
- Impacts on the economy and economic growth as a whole are also not specifically captured. It would not be possible to do this thoroughly without building or gaining access to a comprehensive model of the Philippines economy (no existing macro models in the Philippines – or in most other countries - appear to be sufficiently disaggregated to allow consideration of the land administration reforms being proposed). Partial approaches are possible along the lines set out in chapter 4 of the Finance and Fees Study by tracing effects of particular policies through the key sectors of the economy expected to be directly affected (e.g. real estate, construction). However, without a comprehensive economic model there are limitations to this approach.

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### **3. Characteristics of the Preferred Long Term Option 1**

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The TOR required the model to run three options developed during the policy study stage. The main characteristics of Option 1 are set out in Table 1, while Appendices 2 and 3 set out characteristics for options 2 and 3 respectively. The Finance and Fees Study Report indicated that Option 1 was the preferred long term option to pursue. For this reason Option 1 is dealt with in the body of the Report while for completeness in relation to TOR requirements characteristics and run results of options 2 and 3 are reported on in Appendices 2 and 3 respectively. Comparisons of the main results of Options 1, 2 and 3 are also presented in chapter 5.

**Table 1: Policy Variables for Base Case of Option 1**

POLICY CHOICE	ACTUAL POLICIES 1995 – 2001							SIMULATED POLICIES 1995 – 2001						
	1995	1996	1997	1998	1999	2000	2001	1995	1996	1997	1998	1999	2000	2001
Capital Gains Tax	5.0	5.0	5.0	6.0	6.0	6.0	6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Stamp Tax on Documents	1.7	1.7	1.7	1.7	1.7	1.7	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Transfer Tax – Cities	0.75	0.75	0.75	0.75	0.75	0.75	0.75	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Transfer Tax – Non Cities	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Real Property Tax – Cities	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
RPT – Non Cities	1.0	1.0	1.0	1.0	1.0	1.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Special Education Tax	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Growth in ownership revenues (%)	n.a	n.a	n.a	n.a	n.a	n.a	n.a	0.0	0.0	1.0	2.0	3.0	3.0	3.0
Growth in transactions revenues (%)	n.a	n.a	n.a	n.a	n.a	n.a	n.a	0.0	0.0	3.3	6.6	10.0	10.0	10.0
Growth in due to higher valuation effects (%)	n.a	n.a	n.a	n.a	n.a	n.a	n.a	0.0	0.0	10.0	20.0	30.0	30.0	30.0
Growth in National fees and charges (%) [Excludes LRA]	n.a	n.a	n.a	n.a	n.a	n.a	n.a	0.0	30.0	31.8	34.9	37.7	40.2	41.8
Growth in Local fees and charges post review (%)	n.a	n.a	n.a	n.a	n.a	n.a	n.a	0.0	30.0	31.8	34.9	37.7	40.2	41.8

**Note:** All three options presented in this Report assume an elasticity factor of 0.85 when an increase in a tax rate is being simulated; and an elasticity factor of 1.0 when a decrease in a tax rate is being simulated.

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## **4. Run Results for Option 1**

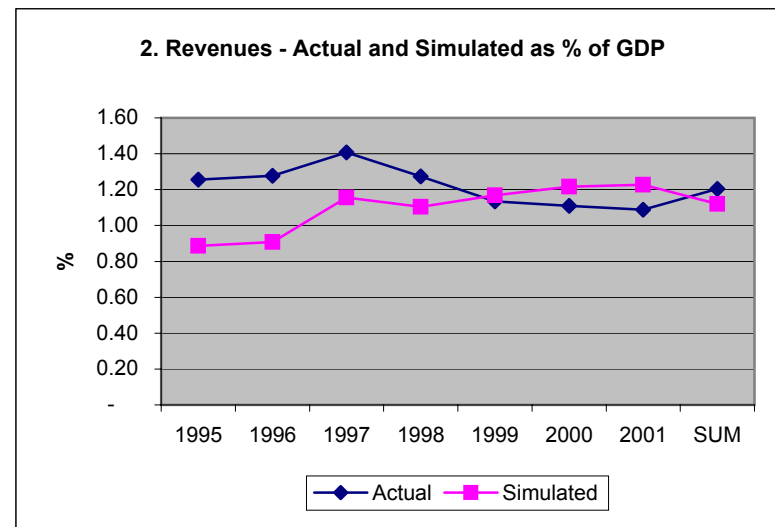
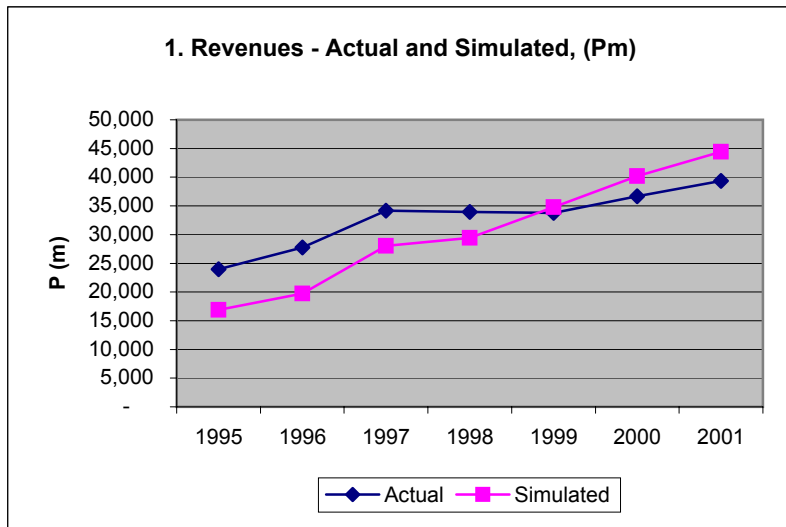
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### **4.1 Presentation of the Results**

The model firstly throws the results into a full simulated data base for the years 1995 to 2001. The full simulated data base is not presented here. Only the results sheets which are automatically prepared by the model are reproduced. These come in the form of eight (8) comparative tables (Tables 2 to 9) and related Graphs (1 to 20). These largely tell their own stories and follow without further comment. However, some further sensitivity analysis in relation to Option 1 is presented at the end of this chapter. Furthermore some comparisons of the three different options are made in chapter 5 and overall concluding comments are made in chapter 6.

**TABLE 2****OPTION 1. TOTAL REVENUES, ACTUAL AND SIMULATED, 1995 to 2001**

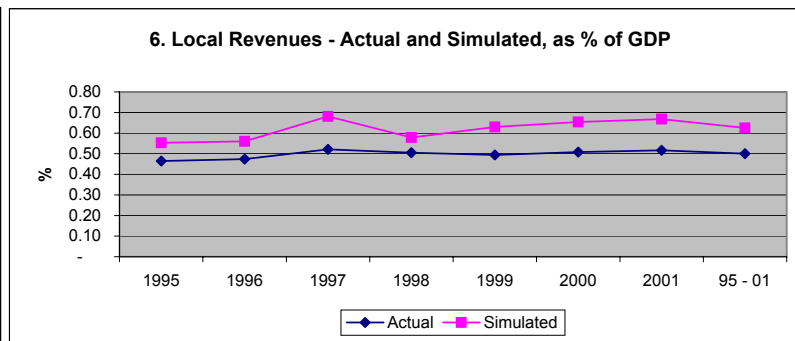
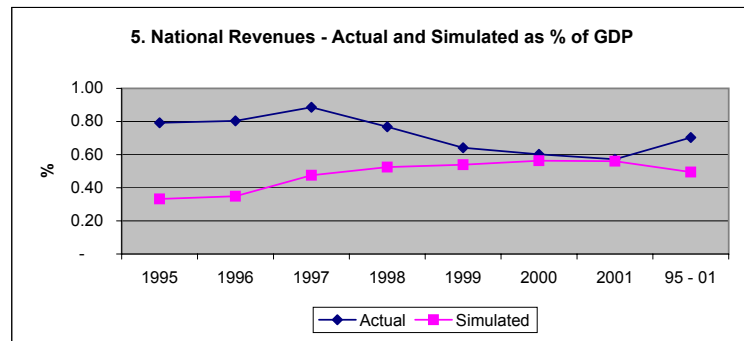
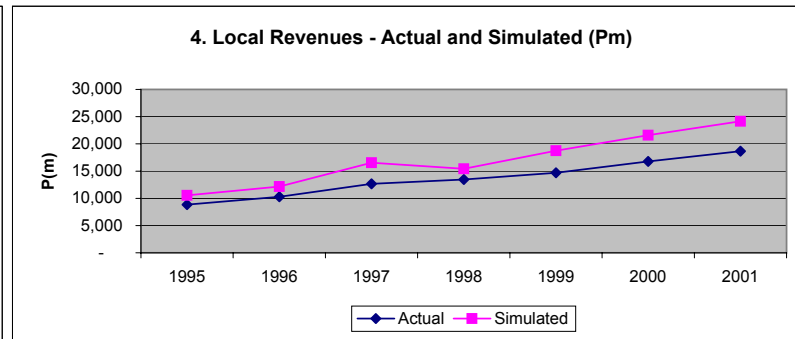
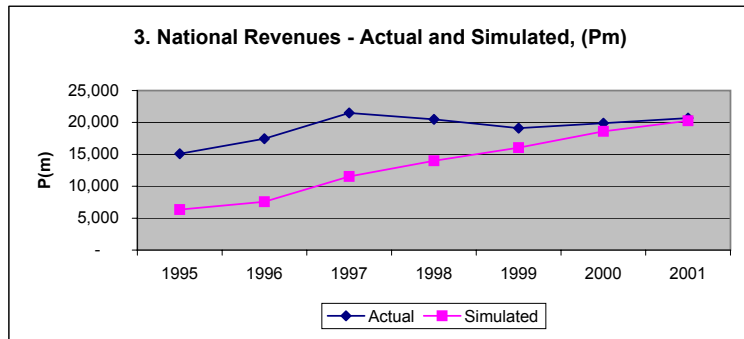
	1995	1996	1997	1998	1999	2000	2001	SUM 95 - 01
Actual Total Revenues (P m)	23,947	27,746	34,156	33,941	33,792	36,650	39,343	229,574
Actual as % of GDP	1.26	1.28	1.41	1.27	1.14	1.11	1.09	1.20
Simulated Total Revenues - Option 1 (P m)	16,880	19,731	28,064	29,418	34,792	40,187	44,410	213,481
Simulated as % of GDP	0.89	0.91	1.16	1.10	1.17	1.22	1.23	1.12



**TABLE 3**

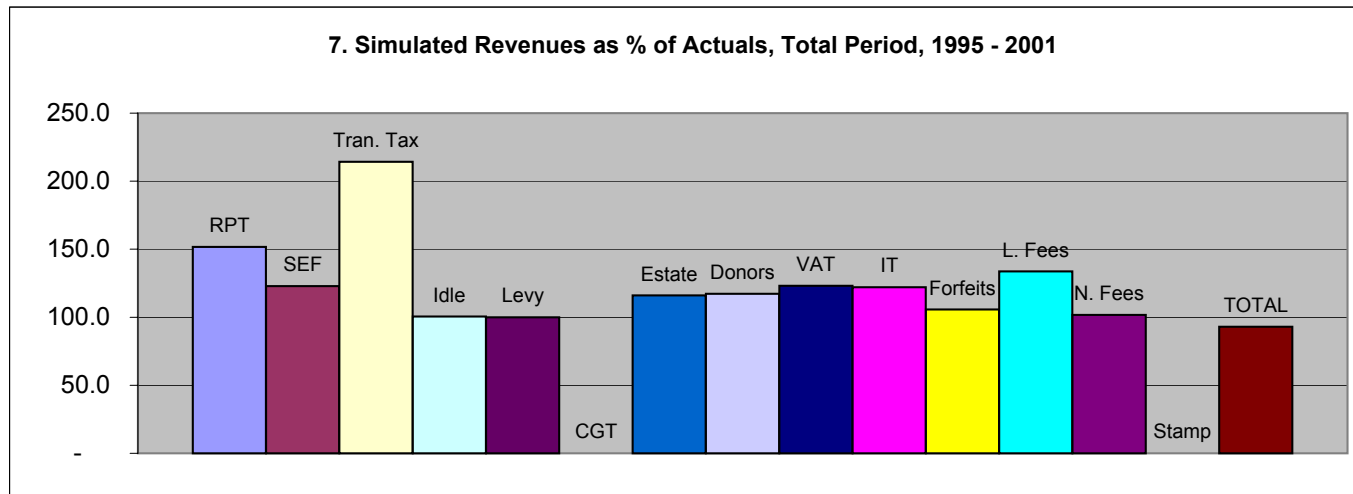
**OPTION 1. NATIONAL AND LOCAL REVENUES, ACTUAL AND SIMULATED, 1995 - 2001**

	1995	1996	1997	1998	1999	2000	2001	SUM 95 - 01
<b>1. National Revenues</b>								
Actual National Revenues (P m)	15,095	17,451	21,501	20,482	19,098	19,875	20,676	134,178
Actual as % of GDP	0.79	0.80	0.89	0.77	0.64	0.60	0.57	0.70
Simulated National Revenues - (P m)	6,344	7,568	11,525	13,988	16,045	18,594	20,254	94,318
Simulated as % of GDP	0.33	0.35	0.47	0.52	0.54	0.56	0.56	0.49
<b>2. Local Revenues</b>								
Actual Local Revenues (P Millions)	8,852	10,295	12,655	13,459	14,694	16,775	18,666	95,396
Actual as % of GDP	0.46	0.47	0.52	0.51	0.49	0.51	0.52	0.50
Simulated Local Revenues - (P m)	10,536	12,163	16,539	15,430	18,747	21,593	24,156	119,164
Simulated as % of GDP	0.55	0.56	0.68	0.58	0.63	0.65	0.67	0.63



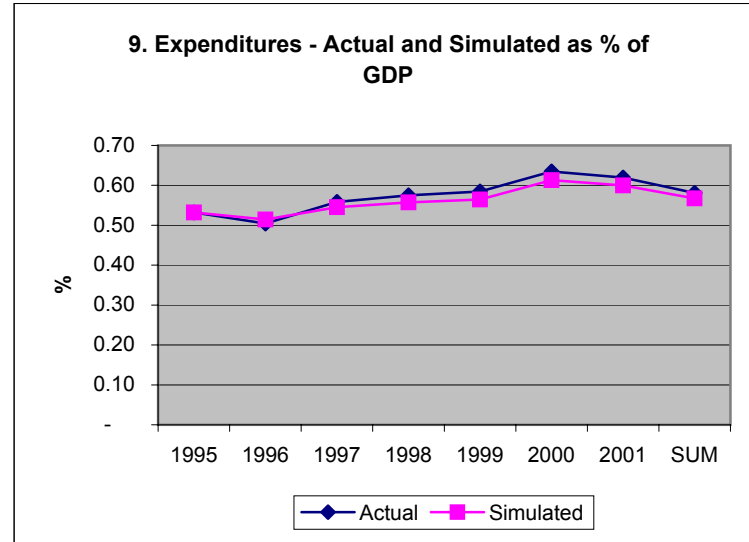
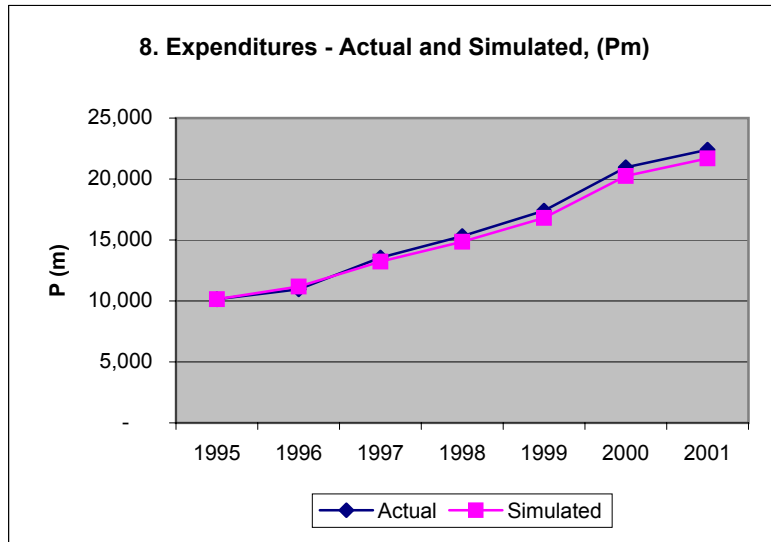
**TABLE 4****OPTION 1. SIMULATED REVENUES AS % OF ACTUAL REVENUES, 1995 to 2001**

	1995	1996	1997	1998	1999	2000	2001	SUM 95 - 01
Real Property Tax	128.3	126.1	139.4	149.9	165.1	165.5	164.9	151.7
Special Education Fund	100.0	100.0	111.1	122.4	133.9	133.9	133.9	122.9
Transfer Tax	170.0	170.0	193.2	217.5	243.1	243.1	243.1	214.2
Idle Lands Tax	100.0	100.5	100.5	100.5	100.5	100.5	100.5	100.5
Special Levy for Public Works	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Capital Gains Tax	-	-	-	-	-	-	-	-
Estate Tax	100.0	100.0	110.0	120.0	130.0	130.0	130.0	116.1
Donors Tax	100.0	100.0	110.0	120.0	130.0	130.0	130.0	117.3
Stamp Tax on Documents	-	-	-	-	-	-	-	-
Value Added Tax (Sale and Lease of Property)	100.0	100.0	111.1	122.4	133.9	133.9	133.9	123.1
Income Tax (Income from Land Transactions)	100.0	100.0	111.1	122.4	133.9	133.9	133.9	122.1
Income from Forfeited Properties	100.0	100.0	106.0	106.0	106.0	106.0	106.0	105.7
Local Fees and Charges	100.0	130.0	131.8	134.9	137.7	140.2	141.8	133.7
Central Fees and Charges	100.0	101.7	101.0	102.3	103.1	102.5	102.1	101.8
<b>TOTAL</b>	<b>70.5</b>	<b>71.1</b>	<b>82.2</b>	<b>86.7</b>	<b>103.0</b>	<b>109.7</b>	<b>112.9</b>	<b>93.0</b>



**TABLE 5**  
**OPTION 1. TOTAL EXPENDITURES, ACTUAL AND SIMULATED, 1995 to 2001**

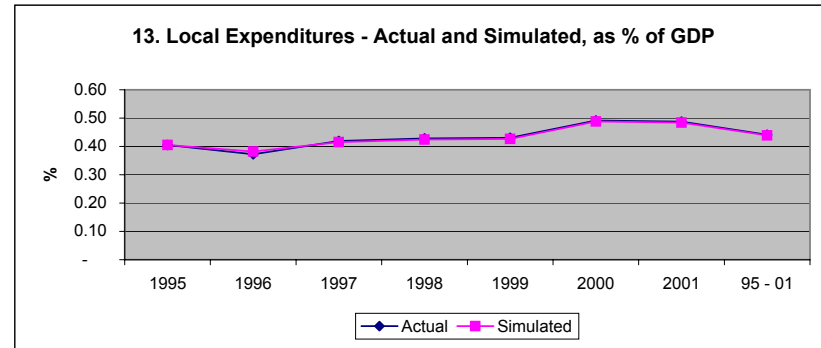
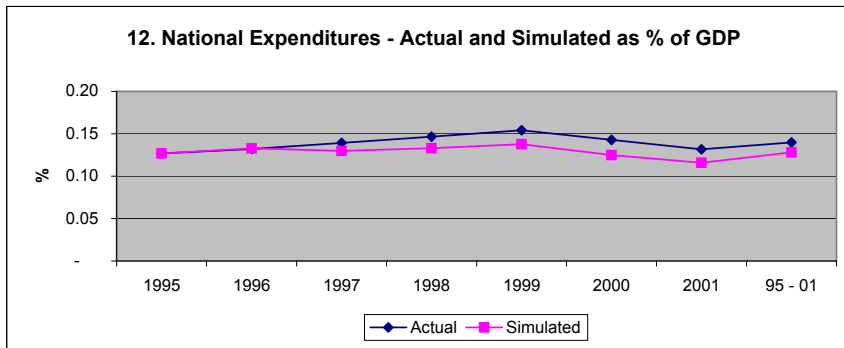
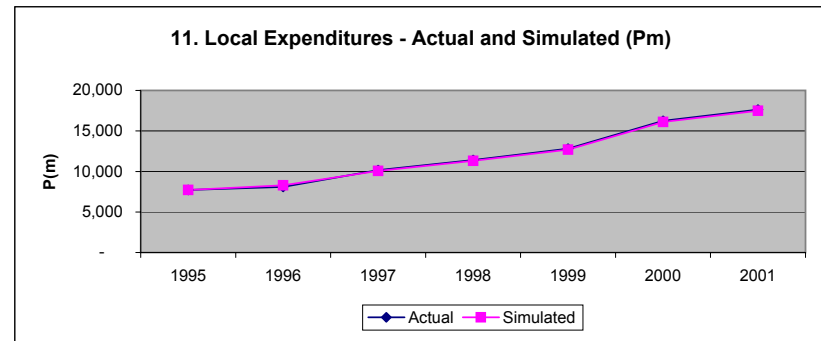
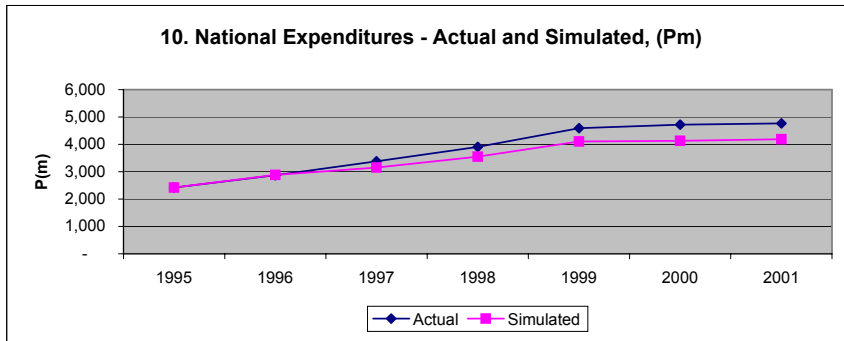
	1995	1996	1997	1998	1999	2000	2001	SUM 95 - 01
Actual Total Expenditures (P m)	10,142	10,956	13,552	15,321	17,404	20,961	22,397	110,732
Actual as % of GDP	0.53	0.50	0.56	0.57	0.58	0.63	0.62	0.58
Simulated Total Expenditures - (P m)	10,142	11,175	13,228	14,851	16,805	20,245	21,687	108,132
Simulated as % of GDP	0.53	0.51	0.55	0.56	0.56	0.61	0.60	0.57



**TABLE 6**

**OPTION 1. NATIONAL AND LOCAL EXPENDITURES, ACTUAL AND SIMULATED, 1995 to 2001**

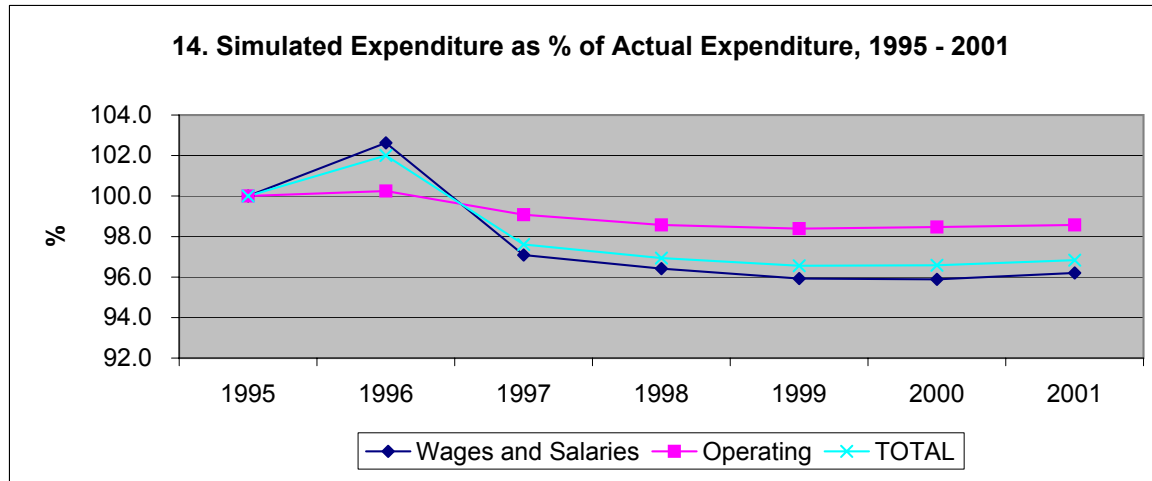
	1995	1996	1997	1998	1999	2000	2001	SUM 95 - 01
<b>1. National Expenditures</b>								
Actual National Expenditures (P m)	2,418	2,870	3,378	3,908	4,590	4,720	4,765	26,650
Actual as % of GDP	0.13	0.13	0.14	0.15	0.15	0.14	0.13	0.14
Simulated National Expenditures - (P m)	2,418	2,884	3,150	3,547	4,102	4,127	4,187	24,415
Simulated as % of GDP	0.13	0.13	0.13	0.13	0.14	0.12	0.12	0.13
<b>2. Local Expenditures</b>								
Actual Local Expenditures (P Millions)	7,724	8,085	10,174	11,413	12,814	16,241	17,631	84,082
Actual as % of GDP	0.41	0.37	0.42	0.43	0.43	0.49	0.49	0.44
Simulated Local Expenditures - (P m)	7,724	8,290	10,078	11,304	12,702	16,118	17,500	83,716
Simulated as % of GDP	0.41	0.38	0.42	0.42	0.43	0.49	0.48	0.44



**TABLE 7**

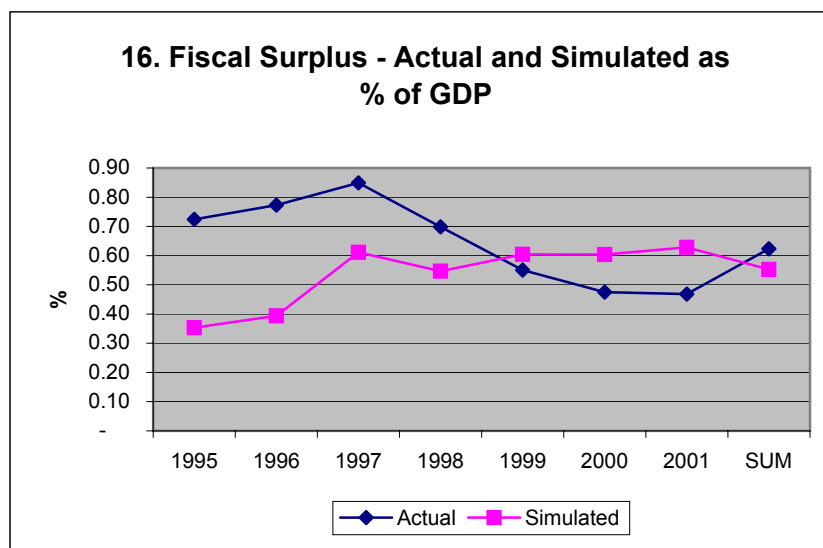
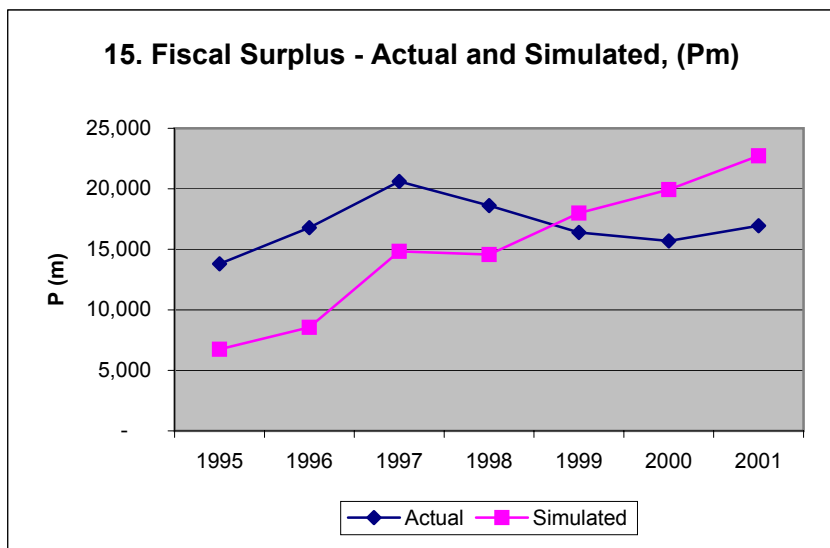
**OPTION 1, DISAGGREGATED TOTAL EXPENDITURES, ACTUAL AND SIMULATED, 1995 to 2001**

	1995	1996	1997	1998	1999	2000	2001	SUM 95 - 01
<b>1. Actual Expenditures (Pm)</b>								
Wages and Salaries	7,401	8,071	10,030	11,649	12,970	15,288	16,467	<b>81,876</b>
Operating	2,741	2,885	3,521	3,671	4,434	5,673	5,930	<b>28,856</b>
<b>TOTAL</b>	<b>10,142</b>	<b>10,956</b>	<b>13,552</b>	<b>15,321</b>	<b>17,404</b>	<b>20,961</b>	<b>22,397</b>	<b>110,732</b>
<b>2. Simulated Expenditures (Pm)</b>								
Wages and Salaries	7,401	8,283	9,739	11,232	12,441	14,659	15,842	<b>79,596</b>
Operating	2,741	2,892	3,489	3,619	4,363	5,586	5,846	<b>28,536</b>
<b>TOTAL</b>	<b>10,142</b>	<b>11,175</b>	<b>13,228</b>	<b>14,851</b>	<b>16,805</b>	<b>20,245</b>	<b>21,687</b>	<b>108,132</b>
<b>Simulated Expenditures as % of Actual Expenditures</b>								
Wages and Salaries	100.0	102.6	97.1	96.4	95.9	95.9	96.2	<b>97.2</b>
Operating	100.0	100.3	99.1	98.6	98.4	98.5	98.6	<b>98.9</b>
<b>TOTAL</b>	<b>100.0</b>	<b>102.0</b>	<b>97.6</b>	<b>96.9</b>	<b>96.6</b>	<b>96.6</b>	<b>96.8</b>	<b>97.7</b>



**TABLE 8**  
**OPTION 1. TOTAL FISCAL SURPLUSES, ACTUAL AND SIMULATED, 1995 to 2001**

	1995	1996	1997	1998	1999	2000	2001	SUM 95 - 01
Actual Fiscal Surplus (P m)	13,805	16,790	20,604	18,620	16,388	15,689	16,946	118,843
Actual as % of GDP	0.72	0.77	0.85	0.70	0.55	0.48	0.47	0.62
Simulated Fiscal Surplus - (P m)	6,738	8,556	14,836	14,567	17,987	19,942	22,723	105,350
Simulated as % of GDP	0.35	0.39	0.61	0.55	0.60	0.60	0.63	0.55



**TABLE 9**

**OPTION 1. NATIONAL AND LOCAL FISCAL SURPLUSES, ACTUAL AND SIMULATED, 1995 - 2001**

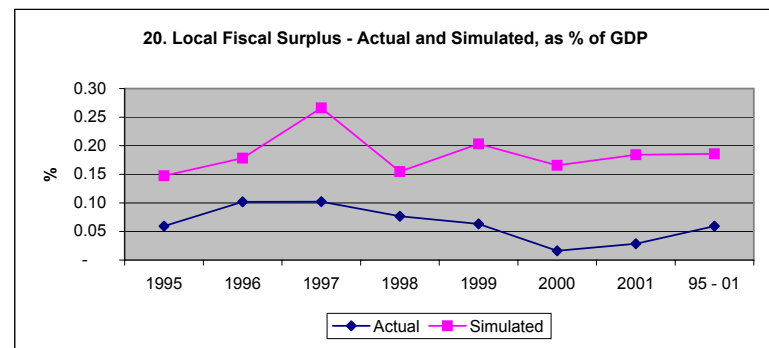
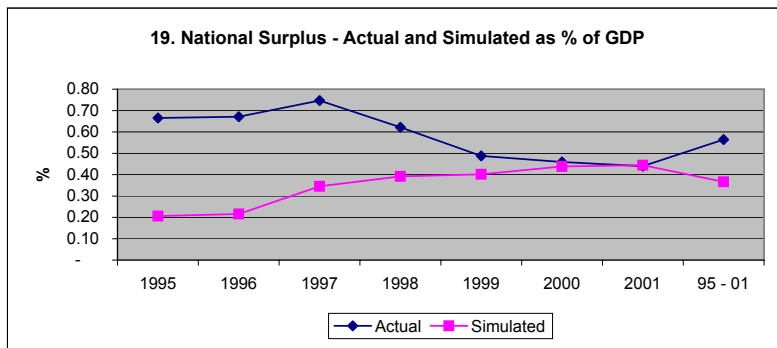
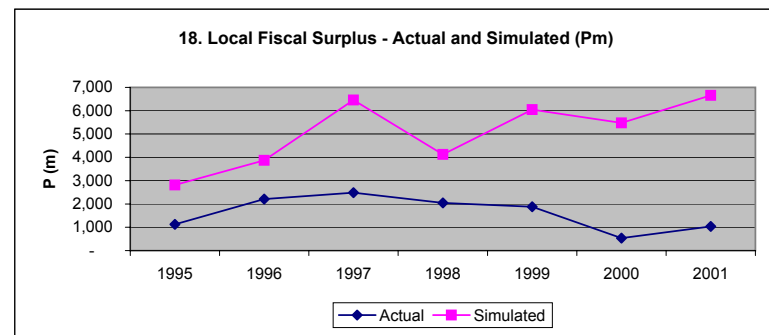
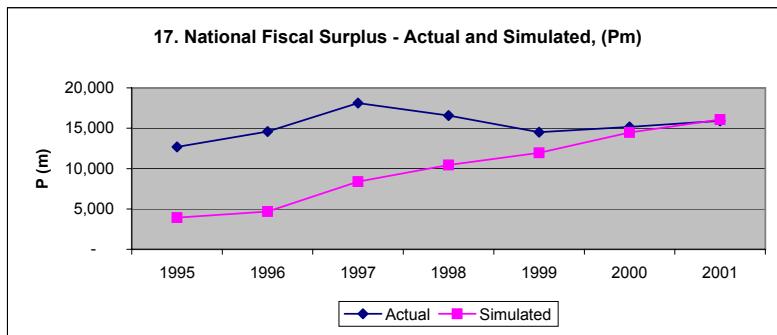
	1995	1996	1997	1998	1999	2000	2001	SUM 95 - 01
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**1. National Fiscal Surplus**

Actual National Fiscal Surplus (P Millions)	12,677	14,580	18,123	16,573	14,508	15,156	15,911	107,528
Actual as % of GDP	0.67	0.67	0.75	0.62	0.49	0.46	0.44	0.56
Simulated National Fiscal Surplus - (P m)	3,925	4,683	8,375	10,441	11,943	14,467	16,067	69,902
Simulated as % of GDP	0.21	0.22	0.35	0.39	0.40	0.44	0.44	0.37

**2. Local Fiscal Surplus**

Actual Local Fiscal Surplus (P Millions)	1,128	2,210	2,481	2,046	1,880	534	1,035	11,315
Actual as % of GDP	0.06	0.10	0.10	0.08	0.06	0.02	0.03	0.06
Simulated Local Fiscal Surplus - (P m)	2,813	3,873	6,461	4,126	6,045	5,475	6,656	35,447
Simulated as % of GDP	0.15	0.18	0.27	0.15	0.20	0.17	0.18	0.19



## 4.2 Further Sensitivity Analysis in Relation to Option 1 Results

The eight tables and related charts presented in Section 4.1 represent the base case for Option 1. This case represents what the Project Team considers to be the most likely outcome under conservative assumptions. However, further sensitivity analysis was undertaken with the running of two additional scenarios as follows: (i) zero growth allowed for effects of valuation increases and titling / transactions increases (a worst case scenario); and (ii) with growth levels due to valuation effects and titling / transactions increases, set at levels so as to break even (the break even case) as defined below. Results of these sensitivities were:

### The Zero Growth (Worst Case) Scenario

This assumes all proposed policy and project reforms fail to impact on valuation levels or the levels of title holdings and formal transactions. The main effects of this scenario are:

- Total revenues over the full seven year period were P 53.1 billions (0.28 % of GDP p.a.) lower in the simulated case than actually were received. In the two final years simulated (the full effect years) revenues per year were around P 6 billions (0.17% of GDP) lower in the simulated case than the actual case;
- National Government revenues over the full seven year period were P 52.0 billions (0.27% of GDP p.a.) lower in the simulated case than actually were received. In the two final years simulated (the full effect years) revenues per year are around P 4 billions (0.11% of GDP) lower in the simulated case than the actual case;
- Local Government revenues over the full seven year period were P 1.1 billions (0.005% of GDP p.a.) lower in the simulated case than actually were received. In the two final years simulated (the full effect years) revenues per year are around P 1.8 billions (0.04% of GDP) lower in the simulated case than the actual case;
- Under this sensitivity run there is no variation on the expenditure side in relation to the base case run (simulated expenditures remain P 2.6 billion lower over the full 7 years than actual levels recorded);
- The total net fiscal result over the full seven year period is a P 50.5 billions (0.26% of GDP p.a.) worsening in the simulated case compared to what actually occurred. In the two final years simulated (the full effect years) the net fiscal results per year are around P 5 billions (0.14 % of GDP) lower in the simulated case than the actual case; and

The net fiscal losses are mainly borne by the National Government with a worsening over the full seven year period by P 49.8 billions (0.26% of GDP p.a.). By comparison the Local Governments are only worse off over the full simulation by P 0.7 billion (0.004% of GDP p.a.).

### The Break Even Scenario

This scenario adjusts growth rates in valuations, title numbers and transactions such that the overall net fiscal result for Government (National plus Local) are neutral over the seven year period as an average percentage of GDP p.a. between the actual case and the simulated case. This test requires the total surplus 1995 to 2001 to average 0.62% of GDP p.a. (equivalent to P118.8 billions over the seven years) in both the actual and simulated cases. Growth rates used in the base case for valuation and titling effects are adjusted accordingly until the break even point is reached. The results indicate the need for the following growth rates to break even over the full 7 years:

- The valuation growth effect must rise to a peak of 44%;
- The titling growth effect in relation to ownership type taxes must rise to a peak of 4%; and
- The titling growth effect in relation to transaction type taxes must rise to a peak of 14%.

In this break even case the Local Government collects significantly more in the simulated case than the actual case while the National Government collects significantly less.

If the break even point is more tightly redefined such that no level of Government loses out (i.e. the National Government breaks even), then significantly higher peak growth rates are needed than in the above or base expectations case as follows: 120% valuation growth; 12% growth in ownership type taxes; and 40% growth in transactions type taxes.

Break even levels for total Government are within reasonable bounds. However, given the biases in this option favoring Local Government, it would be unreasonable to expect that National Government would ever break even over the seven year period.

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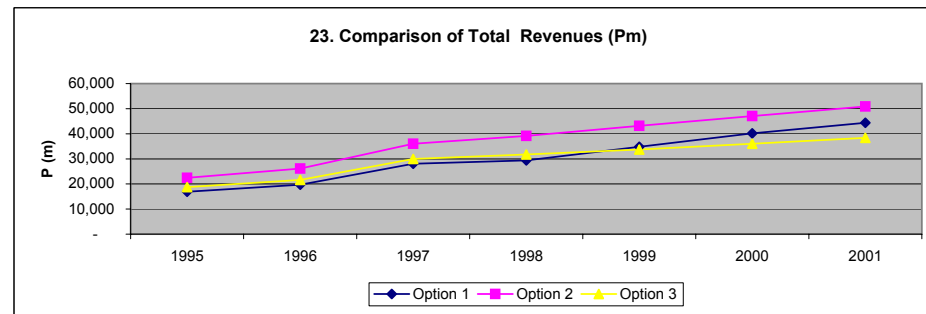
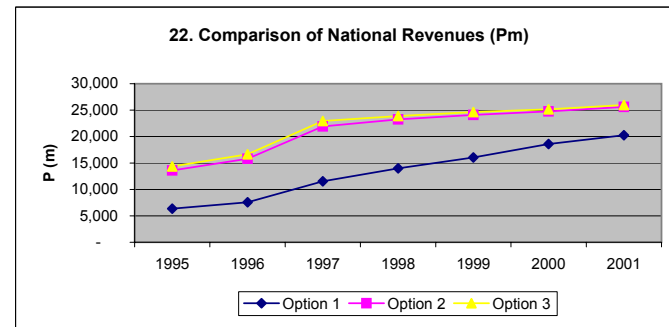
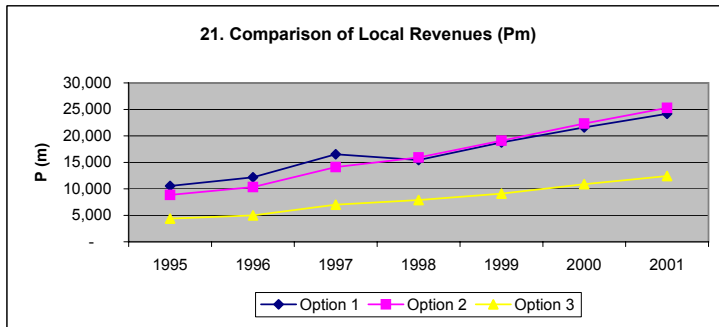
## **5. Comparison of Results for Options 1, 2 and 3**

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With a little manipulation after particular option runs have been concluded the model allows automatic comparison of different option runs (in our particular case between options 1, 2 and 3). The comparative results sheets which are automatically prepared by the model are reproduced here in the three (3) comparative tables (Tables 10 to 12) and related charts for each of options 1, 2 and 3. These tables and charts largely tell their own stories and are presented here without further comment, though overall concluding comments are made in chapter 6.

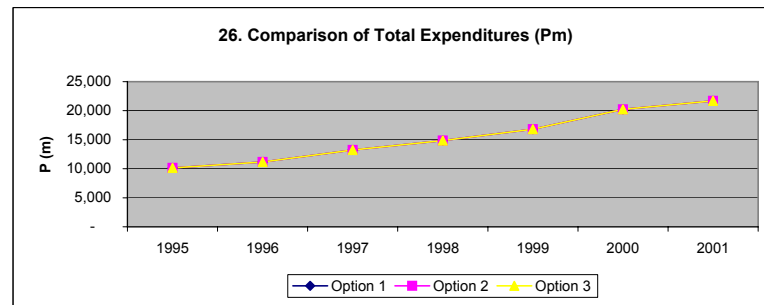
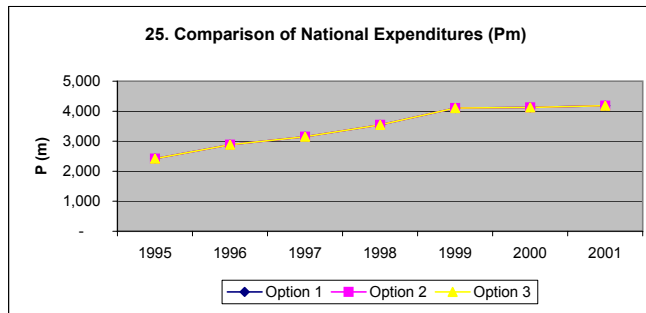
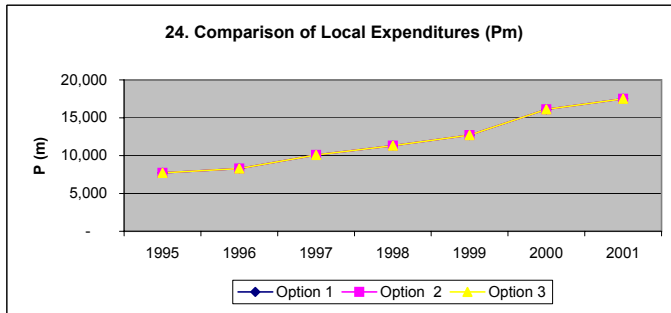
**TABLE 10**  
**REVENUE EFFECTS FOR THE THREE SIMULATED CASES, 1995 to 2001**

	1995	1996	1997	1998	1999	2000	2001	95 - 01
<b>1. Local Revenues</b>								
Actual	8,852	10,295	12,655	13,459	14,694	16,775	18,666	95,396
Option 1	10,536	12,163	16,539	15,430	18,747	21,593	24,156	119,164
Option 2	8,852	10,335	14,112	15,908	19,086	22,335	25,293	115,921
Option 3	4,385	4,982	7,012	7,897	9,104	10,881	12,411	56,672
<b>2. National Revenues</b>								
Actual	15,095	17,451	21,501	20,482	19,098	19,875	20,677	134,179
Option 1	6,344	7,568	11,525	13,988	16,045	18,594	20,254	94,318
Option 2	13,578	15,810	21,909	23,246	24,110	24,750	25,601	149,004
Option 3	14,337	16,644	22,942	23,878	24,638	25,160	25,985	153,584
<b>2. Total Revenues</b>								
Actual	23,947	27,746	34,156	33,941	33,792	36,650	39,343	229,575
Option 1	16,880	19,731	28,064	29,418	34,792	40,187	44,410	213,482
Option 2	22,430	26,145	36,021	39,154	43,196	47,085	50,894	264,925
Option 3	18,722	21,626	29,954	31,775	33,742	36,041	38,396	210,256



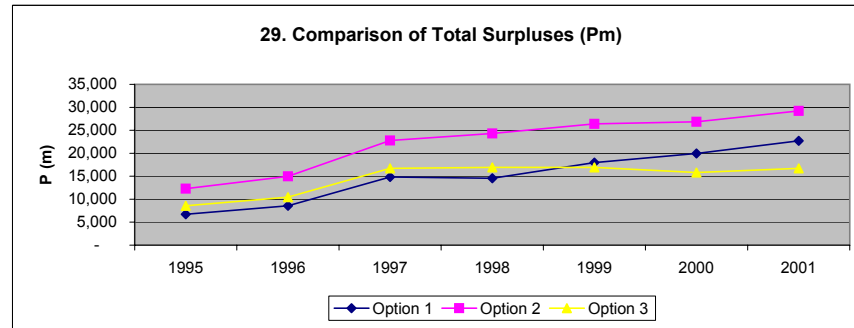
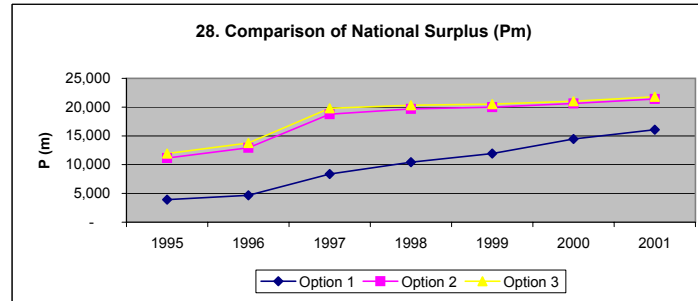
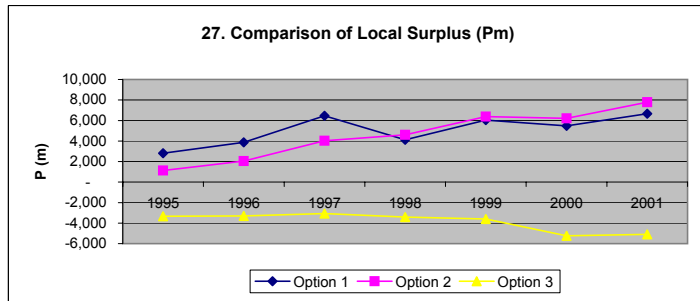
**TABLE 11**  
**EXPENDITURE EFFECTS FOR THE THREE SIMULATED CASES, 1995 to 2001**

	1995	1996	1997	1998	1999	2000	2001	SUM 95 - 01
<b>1. Local Expenditures</b>								
Actual	7,724	8,085	10,174	11,413	12,814	16,241	17,631	84,082
Option 1	7,724	8,290	10,078	11,304	12,702	16,118	17,500	83,716
Option 2	7,724	8,290	10,078	11,304	12,702	16,118	17,500	83,716
Option 3	7,724	8,290	10,078	11,304	12,702	16,118	17,500	83,716
<b>2. National Expenditures</b>								
Actual Expenditures	2,418	2,871	3,378	3,908	4,590	4,720	4,766	26,651
Option 1	2,418	2,885	3,150	3,547	4,103	4,127	4,187	24,417
Option 2	2,418	2,885	3,150	3,547	4,103	4,127	4,187	24,417
Option 3	2,418	2,885	3,150	3,547	4,103	4,127	4,187	24,417
<b>2. Total Expenditures</b>								
Actual Expenditures	10,142	10,956	13,552	15,321	17,404	20,961	22,397	110,733
Option 1	10,142	11,175	13,228	14,851	16,805	20,245	21,687	108,133
Option 2	10,142	11,175	13,228	14,851	16,805	20,245	21,687	108,133
Option 3	10,142	11,175	13,228	14,851	16,805	20,245	21,687	108,133



**TABLE 12**  
**SURPLUSES FOR THE THREE SIMULATED CASES, 1995 to 2001**

	1995	1996	1997	1998	1999	2000	2001	95 - 01
<b>1. Local Surplus</b>								
Actual	1,128	2,210	2,481	2,046	1,880	534	1,035	11,314
Option 1	2,813	3,873	6,461	4,126	6,045	5,475	6,656	35,449
Option 2	1,128	2,045	4,034	4,604	6,384	6,216	7,793	32,204
Option 3	-	3,339 -	3,308 -	3,066 -	3,406 -	3,598 -	5,237 -	27,043
<b>2. National Surplus</b>								
Actual	12,677	14,580	18,123	16,574	14,508	15,155	15,911	107,528
Option 1	3,925	4,683	8,375	10,441	11,942	14,467	16,067	69,900
Option 2	11,161	12,926	18,759	19,699	20,008	20,624	21,414	124,591
Option 3	11,919	13,759	19,793	20,330	20,536	21,033	21,798	129,168
<b>2. Total Surplus</b>								
Actual	13,805	16,790	20,604	18,620	16,388	15,689	16,946	118,842
Option 1	6,738	8,556	14,836	14,567	17,987	19,942	22,723	105,349
Option 2	12,289	14,971	22,793	24,303	26,392	26,840	29,207	156,795
Option 3	8,580	10,451	16,727	16,924	16,938	15,796	16,709	102,125



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## 6. Conclusions

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The main conclusions of this Report are:

- The required financial model has been prepared and is operational. Copies have been provided to the Project Team and all members of the Finance and Fees Interagency Group along with basic operating guidelines;
- Some elements of the data base 1995 – 2001 have involved estimation (as set out in the notes in Appendix 1). Should time permit further work should be undertaken to improve the quality of the data base. However, such improvements are not likely to dramatically change the results as presented;
- Revenue aspects of the data base (and simulations) are considered to be quite reliable (based on a solid data series 1995 – 2001). The main exception here is for Documentary Stamp Tax where further longer term work will be needed to more precisely estimate elements related to property transactions. As set out in the Notes to Appendix 1 estimates used for Stamp Tax have been revised considerably upwards compared to those presented in the Finance and Fees Study. These upward revisions which still need to be confirmed by further work have an important bearing on runs involving cuts in Stamp Tax;
- On the expenditure side some Agencies (particularly DENR, the Judiciary and BIR) are unable to disentangle property administration / titling aspects of their finances from their overall operations. In these cases estimations have been necessary. The work of the Finance and Fees Study has been taken as a starting point but in some cases (particularly for LMB and LMS within DENR) improved estimates have been generated with assistance of the Agencies. While for some Agencies only estimates are possible this is not a very major source of concern at present, as it is mainly policy induced changes to cost structures that are of interest rather than precise quantum. Notwithstanding this improvements to expenditure data bases over time should be pursued;
- At this point in time future project activities and financing sources are quite uncertain. The four policy studies while pointing to likely major policy directional changes are not yet tightly defined in terms of future budget

implications. While an attempt has been made to identify and cost all major policy implications coming out of the four policy studies, it is quite likely that revisions will need to be made over time, both as to the identified forms of expenditures and also as to amounts. The model has been set up in a way that will allow easy revision and updating of cost implications as more detailed project preparation work occurs; and

- The most difficult matters to model have been provision of growth factors for improved valuation effects and for increased levels of titling and formal transactions. These represent core project targets. If reasonable growth is not generated over time then it is likely that key elements of the project's objectives will not have been achieved. The model allows a number of different approaches to analysis of these growth rates. They can be set at zero which under most scenarios will lead to negative net fiscal outcomes. They can be set at break even levels to understand what magnitudes of growth are likely to be needed to provide for fiscal neutrality. And finally they can be set at levels perceived by the project and policy studies to be reasonable in relation to the package of reforms being introduced and bearing in mind results with similar projects elsewhere.

**TABLE 13**  
**HISTORICAL DATA BASE**  
**REVENUES, EXPENDITURES AND FINANCING OF THE LAND ADMINISTRATION SECTOR, 1995 TO 2001, (P Millions)**

	1995	1996	1997	1998	1999	2000	2001	REF.
<b>MODULE 1 - LOCAL GOVERNMENT (CITIES + PROVINCES + MUNICIPALITIES + BARANGAYS)</b>								
<b>1.1 LAND RELATED REVENUES</b>								
Real Property Tax - Cities	2,541	3,014	3,892	4,385	4,570	5,122	5,737	
Real Property Tax - Non Cities	1,726	1,788	2,226	2,078	2,279	2,600	2,834	
Special Education Fund	3,787	4,529	5,495	6,050	6,827	7,822	8,761	
Transfer Tax - Cities	430	534	537	457	626	734	807	
Transfer Tax - Non Cities	250	290	338	253	195	240	259	
Idle Lands Tax	0	1	2	8	1	1	1	
Special Levy for Public Works	4	6	14	73	11	7	9	
Local Fees and Charges	114	133	152	155	185	249	259	
<b>TOTAL</b>	<b>8,852</b>	<b>10,295</b>	<b>12,655</b>	<b>13,459</b>	<b>14,694</b>	<b>16,775</b>	<b>18,666</b>	1
<b>1.2 LAND RELATED EXPENDITURES</b>								
Wages and Salaries	5,534	5,880	7,365	8,293	9,258	11,445	12,475	
Operating	2,189	2,206	2,809	3,120	3,556	4,797	5,156	
<b>TOTAL</b>	<b>7,724</b>	<b>8,085</b>	<b>10,174</b>	<b>11,413</b>	<b>12,814</b>	<b>16,241</b>	<b>17,631</b>	2
<b>1.3 LAND RELATED FINANCING - CASH SURPLUS / (DEFICIT)</b>	<b>1,128</b>	<b>2,210</b>	<b>2,481</b>	<b>2,046</b>	<b>1,880</b>	<b>534</b>	<b>1,035</b>	
<b>MODULE 2 - LAND REGISTRATION AUTHORITY</b>								
<b>2.1 LAND RELATED REVENUES</b>								
Fees and Charges	1,396	1,456	1,717	1,209	1,213	1,238	1,157	
<b>TOTAL</b>	<b>1,396</b>	<b>1,456</b>	<b>1,717</b>	<b>1,209</b>	<b>1,213</b>	<b>1,238</b>	<b>1,157</b>	3
<b>2.2 LAND RELATED EXPENDITURES</b>								
Wages and Salaries	215	256	338	389	411	442	446	
Operating	76	101	121	101	147	135	117	
<b>TOTAL</b>	<b>291</b>	<b>357</b>	<b>459</b>	<b>490</b>	<b>558</b>	<b>577</b>	<b>563</b>	4
<b>2.3 LAND RELATED FINANCING - CASH SURPLUS / (DEFICIT)</b>	<b>1,105</b>	<b>1,099</b>	<b>1,258</b>	<b>719</b>	<b>655</b>	<b>661</b>	<b>594</b>	

	1995	1996	1997	1998	1999	2000	2001	REF.
<b>MODULE 3 - DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES</b>								
<b>3.1 LAND RELATED REVENUES</b>								
Fees and Charges - Land Management Bureau / Land Management Service	63	80	44	79	102	74	54	5
Fees and Charges - National Mapping and Resource Information Authority	8	10	9	8	8	9	8	6
<b>TOTAL - DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES</b>	<b>71</b>	<b>90</b>	<b>53</b>	<b>87</b>	<b>110</b>	<b>83</b>	<b>62</b>	
<b>3.2 LAND RELATED EXPENDITURES</b>								
Wages and Salaries - Land Management Bureau / Service (Includes CARP)	519	619	720	888	912	907	926	
Wages and Salaries - National Mapping and Resource Information Authority	74	84	100	134	145	131	131	
Wages and Salaries - Total	593	703	820	1,022	1,057	1,038	1,057	
Operating - Land Management Bureau / Service (Includes CARP)	262	356	366	213	321	341	259	
Operating - National Mapping and Resource information Authority	43	46	51	63	83	96	96	
Operating - Total	304	402	417	275	404	437	355	
Total Expenditures - Land Management Bureau / Service (Including CARP)	781	975	1,086	1,101	1,233	1,248	1,185	7
Total Expenditures - National Mapping and Resource Information Authority	117	130	151	197	228	227	227	8
<b>TOTAL - DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES</b>	<b>897</b>	<b>1,105</b>	<b>1,237</b>	<b>1,297</b>	<b>1,461</b>	<b>1,475</b>	<b>1,412</b>	
<b>3.3 LAND RELATED FINANCING - CASH SURPLUS / (DEFICIT)</b>								
Financing - Land Management Bureau / Service	-718	-895	-1042	-1022	-1131	-1174	-1131	
Financing - National Mapping and Resource Information Authority	-109	-120	-142	-189	-220	-218	-219	
<b>TOTAL - DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES</b>	<b>-827</b>	<b>-1015</b>	<b>-1184</b>	<b>-1211</b>	<b>-1352</b>	<b>-1392</b>	<b>-1350</b>	
<b>MODULE 4 - DEPARTMENT OF AGRARIAN REFORM</b>								
<b>4.1 LAND RELATED REVENUES</b>								
Fees and Charges	0	0	0	0	0	0	0	9
<b>TOTAL</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	
<b>4.2 LAND RELATED EXPENDITURES</b>								
Wages and Salaries	585	688	760	1,087	1,131	1,151	1,266	
Operating	41	48	40	37	35	40	40	
<b>TOTAL</b>	<b>626</b>	<b>736</b>	<b>800</b>	<b>1,124</b>	<b>1,166</b>	<b>1,191</b>	<b>1,306</b>	10
<b>4.3 LAND RELATED FINANCING - CASH SURPLUS / (DEFICIT)</b>	<b>- 626</b>	<b>- 736</b>	<b>- 800</b>	<b>- 1,124</b>	<b>- 1,166</b>	<b>- 1,191</b>	<b>- 1,306</b>	

**MODULE 5 - THE JUDICIARY**

	1995	1996	1997	1998	1999	2000	2001	REF.
<b><u>5.1 LAND RELATED REVENUES</u></b>								
Fees and Charges	0	0	0	0	0	0	0	
<b><u>TOTAL</u></b>	<b><u>0</u></b>	<b><u>0</u></b>	<b><u>0</u></b>	<b><u>0</u></b>	<b><u>0</u></b>	<b><u>0</u></b>	<b><u>0</u></b>	11
<b><u>5.2 LAND RELATED EXPENDITURES</u></b>								
Wages and Salaries	420	474	659	773	812	845	858	
Operating	111	95	107	116	124	126	123	
<b><u>TOTAL</u></b>	<b><u>530</u></b>	<b><u>569</u></b>	<b><u>766</u></b>	<b><u>889</u></b>	<b><u>937</u></b>	<b><u>971</u></b>	<b><u>981</u></b>	12
<b><u>5.3 LAND RELATED FINANCING - CASH SURPLUS / (DEFICIT)</u></b>	<b><u>-530</u></b>	<b><u>-569</u></b>	<b><u>-766</u></b>	<b><u>-889</u></b>	<b><u>-937</u></b>	<b><u>-971</u></b>	<b><u>-981</u></b>	

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**MODULE 6 - NATIONAL COMMISSION ON INDIGENOUS PEOPLE**

**6.1 LAND RELATED REVENUES**

Fees and Charges	0	0	0	0	0	0	0	
<b><u>TOTAL</u></b>	<b><u>0</u></b>	<b><u>0</u></b>	<b><u>0</u></b>	<b><u>0</u></b>	<b><u>0</u></b>	<b><u>0</u></b>	<b><u>0</u></b>	13

**6.2 LAND RELATED EXPENDITURES**

Wages and Salaries	0	0	0	0	217	256	256	
Operating	0	0	0	0	147	104	104	
<b><u>TOTAL</u></b>	<b><u>0</u></b>	<b><u>0</u></b>	<b><u>0</u></b>	<b><u>0</u></b>	<b><u>363</u></b>	<b><u>360</u></b>	<b><u>360</u></b>	14
<b><u>6.3 LAND RELATED FINANCING - CASH SURPLUS / (DEFICIT)</u></b>	<b><u>0</u></b>	<b><u>0</u></b>	<b><u>0</u></b>	<b><u>0</u></b>	<b><u>-363</u></b>	<b><u>-360</u></b>	<b><u>-360</u></b>	

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**MODULE 7 - BUREAU OF INTERNAL REVENUE**

**7.1 LAND RELATED REVENUES**

Capital Gains Tax	3,792	4,168	4,543	4,384	3,615	3,452	3,181	
Estate Tax	287	420	684	277	396	278	366	
Donors Tax	130	148	211	135	124	156	188	
Stamp Tax on Documents	4,960	5,742	6,413	7,308	6,138	5,484	5,548	
Value Added Tax (Sale and Lease of Property)	900	1,061	2,604	1,189	1,598	2,668	2,908	
Income Tax (Income from Land Transactions)	3,557	4,363	5,253	5,885	5,888	6,500	7,226	
Income from Forfeited Properties	3	3	23	8	16	17	40	
<b><u>TOTAL</u></b>	<b><u>13,629</u></b>	<b><u>15,905</u></b>	<b><u>19,731</u></b>	<b><u>19,186</u></b>	<b><u>17,775</u></b>	<b><u>18,555</u></b>	<b><u>19,457</u></b>	15

	1995	1996	1997	1998	1999	2000	2001	REF.
<b><u>7.2 LAND RELATED EXPENDITURES</u></b>								
Wages and Salaries	54	70	89	86	83	112	109	
Operating	20	34	27	22	22	34	34	
<b>TOTAL</b>	<b><u>74</u></b>	<b><u>104</u></b>	<b><u>116</u></b>	<b><u>108</u></b>	<b><u>105</u></b>	<b><u>146</u></b>	<b><u>143</u></b>	16
<b><u>7.3 LAND RELATED FINANCING - CASH SURPLUS / (DEFICIT)</u></b>	<b><u>13,555</u></b>	<b><u>15,801</u></b>	<b><u>19,615</u></b>	<b><u>19,078</u></b>	<b><u>17,670</u></b>	<b><u>18,409</u></b>	<b><u>19,314</u></b>	

**MODULE 8 - NATIONAL CONSOLIDATION**

**8.1 LAND RELATED REVENUES**

Real Property Tax	4,267	4,802	6,118	6,463	6,849	7,722	8,571	
Special Education Fund	3,787	4,529	5,495	6,050	6,827	7,822	8,761	
Transfer Tax	680	824	875	710	821	974	1,067	
Idle Lands Tax	0	1	2	8	1	1	1	
Special Levy for Public Works	4	6	14	73	11	7	9	
Capital Gains Tax	3,792	4,168	4,543	4,384	3,615	3,452	3,181	
Estate Tax	287	420	684	277	396	278	366	
Donors Tax	130	148	211	135	124	156	188	
Stamp Tax on Documents	4,960	5,742	6,413	7,308	6,138	5,484	5,548	
Value Added Tax (Sale and Lease of Property)	900	1,061	2,604	1,189	1,598	2,668	2,908	
Income Tax (Income from Land Transactions)	3,557	4,363	5,253	5,885	5,888	6,500	7,226	
Income from Forfeited Properties	3	3	23	8	16	17	40	
Local Fees and Charges	114	133	152	155	185	249	259	
Central Fees and Charges	1,467	1,546	1,770	1,296	1,323	1,321	1,219	
<b>TOTAL</b>	<b><u>23,947</u></b>	<b><u>27,746</u></b>	<b><u>34,156</u></b>	<b><u>33,941</u></b>	<b><u>33,792</u></b>	<b><u>36,650</u></b>	<b><u>39,343</u></b>	

**8.2 LAND RELATED EXPENDITURES**

Wages and Salaries	7,401	8,071	10,030	11,649	12,970	15,288	16,467	
Operating	2,741	2,885	3,521	3,671	4,434	5,673	5,930	

<b>TOTAL</b>	<b><u>10,142</u></b>	<b><u>10,956</u></b>	<b><u>13,552</u></b>	<b><u>15,321</u></b>	<b><u>17,404</u></b>	<b><u>20,961</u></b>	<b><u>22,397</u></b>	
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<b><u>8.3 LAND RELATED FINANCING - CASH SURPLUS / (DEFICIT)</u></b>	<b><u>13,805</u></b>	<b><u>16,790</u></b>	<b><u>20,604</u></b>	<b><u>18,620</u></b>	<b><u>16,388</u></b>	<b><u>15,689</u></b>	<b><u>16,946</u></b>	
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## **Notes / Sources to the Data Base Table**

### **A. General**

The data base aims to construct fiscal information (revenues, expenditures and overall fiscal outturn) from 1995 – 2001 for all key public institutions involved in land administration and titling type activities. While this is straightforward for some single function organizations, for others which have multiple functions it is far from straightforward. In many cases estimates have needed to be made, details of which are set out below. Because accounting and statistical reporting systems in the Philippines (and most other countries) are not well designed to provide specific information on the land administration and titling sub sector, what is presented is at best a rough approximation of fiscal trends within the sub sector. In line with public sector accounting approaches in the Philippines all estimates in the data base are prepared on a cash basis without provision for depreciation or the costs of capital. Estimates are for cash running costs only and specifically exclude capital outlays and special projects that do not relate directly to land administration / land titling. Numbered notes which follow correspond with the reference numbers contained in the data base presented above.

#### **1. Local Government Land Related Revenues**

Source: Various Annual Reports of the Commission on Audit for 1995 to 2000. Estimates for 2001 prepared by LAMP Team in line with trend growth and relationship to GDP, 1995 to 2000. Idle Lands Tax and the Special Levy for Public Works have been lumped by the Auditor so it has been assumed that these are 10% and 90% of total respectively – amounts collected for these two items are negligible. Fees and charges have been confined to: (a) survey / cadastral fees; and (b) certification fees.

#### **2. Local Government Land Related Expenditures**

Source: Various Annual Reports of the Commission on Audit for 1995 to 2000. Estimates for 2001 prepared by LAMP Team in line with trend growth and relationship to GDP, 1995 to 2000. Expenditures are estimated to be 100% of costs of (Assessment of Real Property + Land Registration Services); and 35% of costs of (Executive Services + Administrative Services + General Services + Budget Services + Accounting Services + Treasury Services + Audit Services + Information Services + Legal Services). The 35% ratio is the approximate average over time of: Land Related Revenues / (Total Local Revenues – IRA Receipts).

#### **3. Land Registration Authority Fees**

Source: Various Annual Reports of LRA, 1995 – 2001 (2001 still in draft). Fees include provision for (a) Assurance Fund; and (b) Research Fee.

#### 4. Land Registration Authority Expenditures

Source: Various Annual Reports of LRA, 1995 – 2001 (2001 still in draft). Totals exclude expenditures from retained revenues (Fund 152) which have averaged around P 100 million p.a. between 1995 and 2001. They also exclude some CARP related expenditures that pass through LRA (average nominal operating amounts of P 91.1 million p.a. between 1995 and 2001).

#### 5. Fees and Charges of Land Management Bureau / Land Management Service

Source: Estimates of actual receipts dissected from DENR accounts 1995 – 2001 (by DENR staff and project team members). Combined receipts of LMB and LMS are presented.

#### 6. Fees and Charges of National Mapping and Resource Information Authority

Source: Various NAMRIA Annual Financial Reports, 1995 – 2001.

#### 7. Expenditures of Land Management Bureau / Land Management Service

Source: Estimates of actual expenditures dissected from DENR accounts 1995 – 2001 and in some cases the General Appropriations Act (by DENR staff and project team members). Include estimated combined expenditures of LMB, LMS, CARP and Secretary's Office Overheads. Because accounts of DENR do not allow easy extraction of matters specific to land administration / titling the numbers should be treated as broad estimates only. Expenditures exclude foreign and domestic counterpart expenditure on the World Bank / AusAID LAMP project which commenced in 2001 (domestic counterpart project funding is estimated as P 73.9 million for 2001).

#### 8. Expenditures of National Mapping and Resource Information Authority

Source: Various NAMRIA Annual Financial Reports, 1995 – 2001. Expenditures exclude foreign and domestic counterpart expenditure on the JICA Mapping Project which ran from 1998 to 2000 (domestic counterpart project funding estimated as P 13.6 million for the period 1998 to 2000).

#### 9. Fees and Charges of Department of Agrarian Reform

Source: DAR Finance Officials and Accounts indicate no significant land administration fees are charged or collected by DAR.

#### 10. Expenditures of Department of Agrarian Reform

Source: Various years of Budgets of Expenditure and Sources of Funding (appropriation levels only with actual expenditure data not available). Estimates are not for full DAR operations, but only cover the following activities: Operations and Support to Operations of (a) Agrarian Legal Assistance; (b) Land Acquisition and Distribution; and (c) Land Use Management and Development. Estimates specifically exclude DAR expenditures of the Agrarian Reform Fund which are significant (Appropriations of P 8 billion in 2000). Most expenditures from the Fund do not go to land administration or titling. Separate provisions from this Fund have been made to LMB and LMS of DENR for land administration related activities and have been specifically included in the DENR expenditure estimates as noted in 7 above. Similarly separate provisions from this Fund have been made to LRA for land administration related activities and these have been summarized in the notes at 4 above. None of the current policy initiatives under consideration have implications for the DAR. DAR has been included in the data base mainly for completeness of sector information and also in the event that future policy initiatives more directly impact it.

#### 11. Fees and Charges of the Judiciary

Source: Financial Offices of the Judiciary advise that fees and charges relating to land titling / administration are minimal. Virtually all fees collected by the Judiciary in relation to land matters are passed on to the LRA and appear through LRA's books. Zero receipts have been recorded against the Judiciary.

#### 12. Expenditures of the Judiciary

Source: Survey of the Courts conducted by the Legal Policy Study and Various years of the General Appropriations Act. Based on the survey results it is estimated that 15% of the costs of the following Courts can be attributed to land related matters which over time will be transferred to the new LAA (Lower Courts + Higher Courts + Court of Appeal + Court of Tax Appeals). Note that estimates presented are 15% of Appropriations and not 15% of actual outlays which were not readily available.

#### 13. Fees and Charges of the National Commission on Indigenous People

Source: NCIP Finance Officials and Accounts indicate no significant land administration fees are charged or collected by NCIP since reporting from this relatively new Organization commenced in 1999.

#### 14. Expenditures of National Commission on Indigenous People

Source: Various years of Budgets of Expenditure and Sources of Funding (appropriation levels only with actual expenditure data not available). Estimates

are for full NCIP operations. None of the current policy initiatives under consideration have implications for the NCIP. NCIP has been included in the data base mainly for completeness of sector information and also in the event that future policy initiatives more directly impact it.

#### 15. Bureau of Internal Revenue Land Related Revenues

Source: Various BIR Annual and Internal Reports. Most numbers are based on official BIR statistics. However, the following estimates warrant specific comment:

- Some revisions to Capital Gains Tax estimates have been made since the July 2002 Finance and Fees study was completed. These revisions are based on more complete internal information provided by the BIR for CGT related specifically to real property transactions. Comparison of the revised estimates with those previously used are as follows:

	<b><u>P(m)</u></b>	
	<b><u>July Report</u></b>	<b><u>Current Data Base</u></b>
1995	4,992	3,792
1996	4,174	4,168
1997	5,204	4,543
1998	4,387	4,384
1999	3,696	3,615
2000	3,459	3,452
2001	n.a.	3,181

- Data on Income Tax derived from land related transactions remains directly unavailable. The July 2002 Finance and Fees Study only estimated this data for 2000 using large business survey data. A slight adaptation of this method has been used for all other years with land related Income Tax estimated to be 3.2% of all Income Taxes. The method used is far from satisfactory. However, no specific policy changes are proposed in relation to Income Taxes so the fiscal implications are not significant;
- Most uncertainty and concern with the BIR estimates continues to revolve around estimates for real property related Stamp Tax. Further work indicates that DST on real property was understated in the July Finance and Fees Study. Reasons for this include:
  - The decision to relate the tax base to CGT + VAT was on reflection not appropriate. A better if still quite conservative base would be the Local Transfer Tax, which is essentially the same tax, collected in

the same location – though the Stamp tax is collected by the BIR – against zonal valuation assessments generally thought to be higher than LGU assessments. The Local Transfer base should provide floor level conservative estimates of national stamp tax on real property transfers;

- An important implication of the Finance and Fees Study conclusions was that the ratio of all Real Property Stamp Taxes to Total Stamp Taxes was 8.1%. This seems to be implausible bearing in mind the limited range of Stamp Duties in place and considering significant international experience that real property stamp taxes usually form the majority of Stamp Taxes received, typically 60% to 70% (even where far more comprehensive schedules of Stamp Taxes exist than is the case in the Philippines);and
- The June 2002 DST survey conducted by BIR although too short a period and generating too low a response rate to be conclusive, is nevertheless providing strong supporting evidence. To date returns from 38 of the 115 Revenue District Offices have been received. These indicate that 66% of DST is Real Property related (around 82 % of this in Transfers, 17% in Mortgages and 1% in Leases). It seems inconceivable that additional returns (or even a lengthier study period) would revert the result from 66% to 8%.
- Bearing the above in mind a decision was needed as to how to re estimate DST receipts. Using the Transfer Tax as the base would take 2000 revenues from the P 1,117 (8.1% of Total DST) used in the earlier Report to P 2,590 million (18.9% of Total DST). Even these significantly higher numbers are very conservative in relation to the emerging (as yet incomplete) survey data available. On balance our judgement has been to opt in the data base for a higher estimate still which is closer to the initial survey results (and international experience) though still well short of them. It has been decided to set the rate of land related DST at 40% of Total DST for 2000 and other years. For 2000 this equates to P 5,484 million, which is significantly higher than early estimates with important implications for model runs and Government policy.

#### 16. BIR Land Related Expenditures

Source: Various Annual Reports of the BIR, plus internal BIR Reports. As BIR spends only a small portion of its operating time and expenditures collecting land related revenues it was decided to develop an estimate of the costs of collecting only the land related expenditures. These costs were estimated using the following formula for each of the years: Land Related Costs = (Total Property Taxes / Total Taxes) x (Total Costs).

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## **Appendix 2. Characteristics and Run Results for Option 2**

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The main characteristics of Option 2 are set out in Table 14 which follows. With regard to results, as indicated in chapter 4 the model firstly throws the results into a simulated data base for the years 1995 to 2001. The full simulated data base is not presented here. Only the results sheets which are automatically prepared by the model are reproduced here in the eight (8) sets of comparative Tables (15 to 22) and Graphs which follow for Option 2. These largely tell their own story and are presented here without further comment, though some comparisons of the three different options are made in chapter 5 and some overall concluding comments are made in chapter 6.

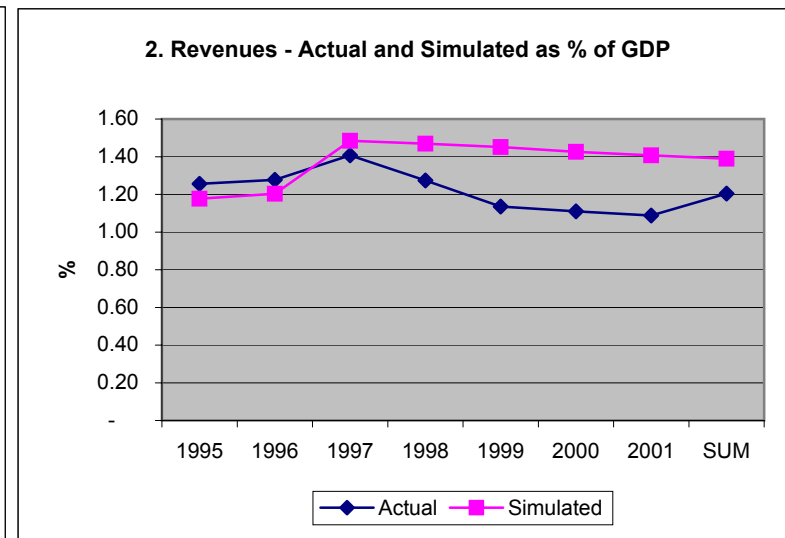
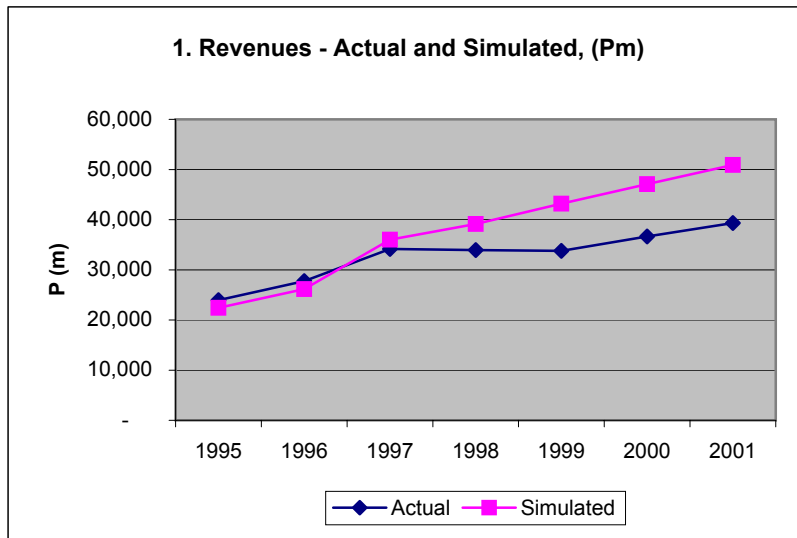
**Table 14: Policy Variables for Base Case of Option 2**

POLICY CHOICE	ACTUAL POLICIES 1995 – 2001							SIMULATED POLICIES 1995 – 2001						
	1995	1996	1997	1998	1999	2000	2001	1995	1996	1997	1998	1999	2000	2001
Capital Gains Tax	5.0	5.0	5.0	6.0	6.0	6.0	6.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Stamp Tax on Documents	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
Transfer Tax – Cities	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Transfer Tax – Non Cities	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Real Property Tax – Cities	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
RPT – Non Cities	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Special Education Tax	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Growth in ownership revenues (%)	n.a	n.a	n.a	n.a	n.a	n.a	n.a	0.0	0.0	1.0	2.0	3.0	3.0	3.0
Growth in transactions revenues (%)	n.a	n.a	n.a	n.a	n.a	n.a	n.a	0.0	0.0	3.3	6.6	10.0	10.0	10.0
Growth in revenues due to higher valuation effects (%)	n.a	n.a	n.a	n.a	n.a	n.a	n.a	0.0	0.0	10.0	20.0	30.0	30.0	30.0
Growth in National fees and charges (%) [Excludes LRA]	n.a	n.a	n.a	n.a	n.a	n.a	n.a	0.0	30.0	31.8	34.9	37.7	40.2	41.8
Growth in Local fees and charges post review (%)	n.a	n.a	n.a	n.a	n.a	n.a	n.a	0.0	30.0	31.8	34.9	37.7	40.2	41.8

**Note:** All three options presented in this Report assume an elasticity factor of 0.85 when an increase in a tax rate is being simulated; and an elasticity factor of 1.0 when a decrease in a tax rate is being simulated.

**TABLE 15****OPTION 2. TOTAL REVENUES, ACTUAL AND SIMULATED, 1995 to 2001**

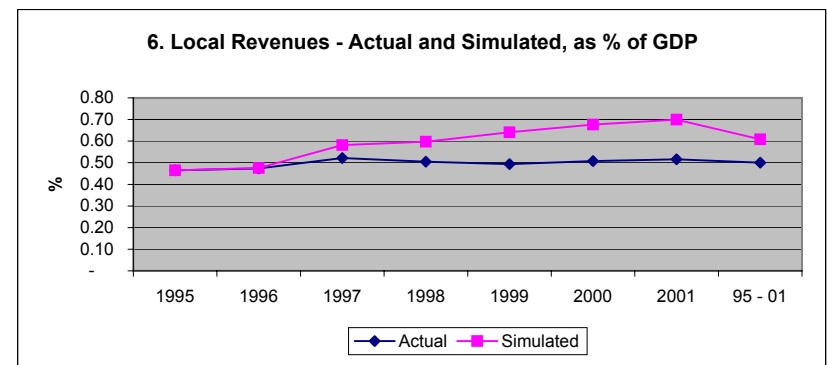
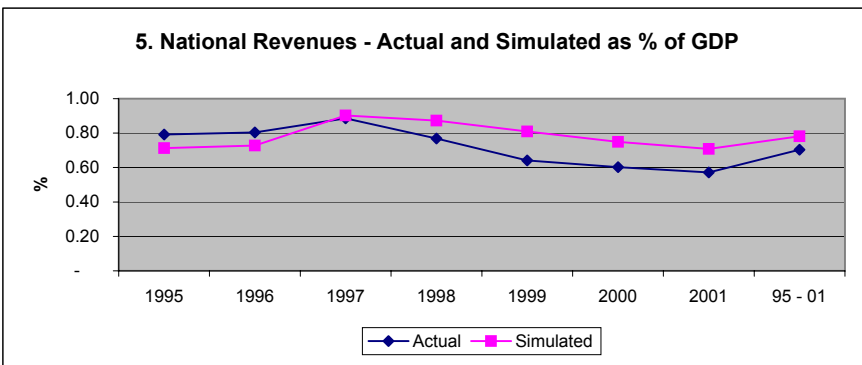
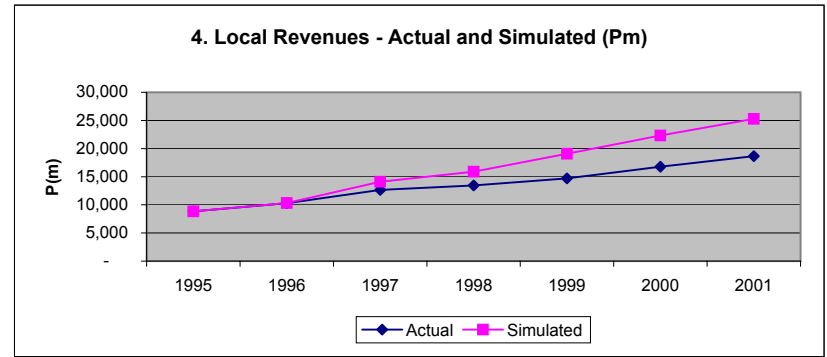
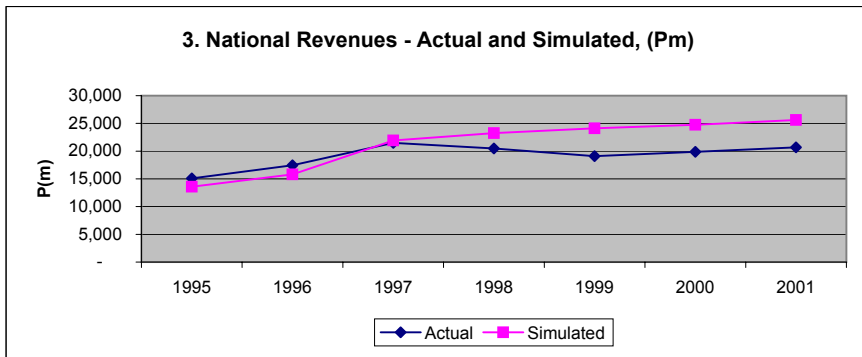
	1995	1996	1997	1998	1999	2000	2001	SUM 95 - 01
Actual Total Revenues (P m)	23,947	27,746	34,156	33,941	33,792	36,650	39,343	229,574
Actual as % of GDP	1.26	1.28	1.41	1.27	1.14	1.11	1.09	1.20
Simulated Total Revenues - Option 1 (P m)	22,430	26,145	36,021	39,154	43,196	47,085	50,894	264,926
Simulated as % of GDP	1.18	1.20	1.48	1.47	1.45	1.43	1.41	1.39



**TABLE 16**

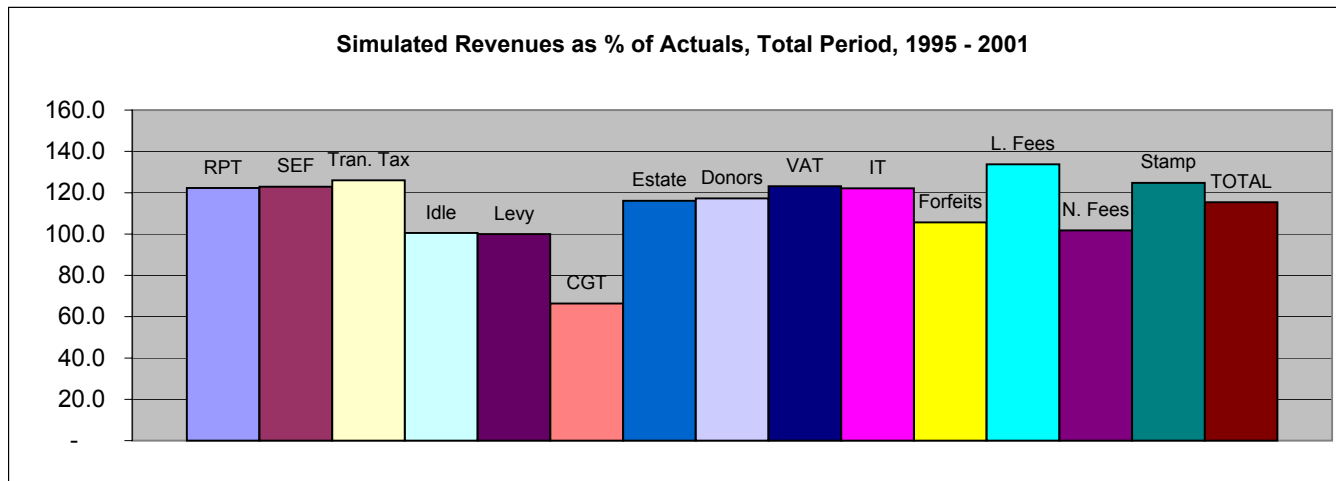
**OPTION 2. NATIONAL AND LOCAL REVENUES, ACTUAL AND SIMULATED, 1995 - 2001**

	1995	1996	1997	1998	1999	2000	2001	SUM 95 - 01
<b>1. National Revenues</b>								
Actual National Revenues (P m)	15,095	17,451	21,501	20,482	19,098	19,875	20,676	134,178
Actual as % of GDP	0.79	0.80	0.89	0.77	0.64	0.60	0.57	0.70
Simulated National Revenues - (P m)	13,578	15,811	21,909	23,246	24,110	24,750	25,601	149,006
Simulated as % of GDP	0.71	0.73	0.90	0.87	0.81	0.75	0.71	0.78
<b>2. Local Revenues</b>								
Actual Local Revenues (P Millions)	8,852	10,295	12,655	13,459	14,694	16,775	18,666	95,396
Actual as % of GDP	0.46	0.47	0.52	0.51	0.49	0.51	0.52	0.50
Simulated Local Revenues - (P m)	8,852	10,335	14,112	15,908	19,086	22,335	25,293	115,920
Simulated as % of GDP	0.46	0.48	0.58	0.60	0.64	0.68	0.70	0.61



**TABLE 17**  
**OPTION 2. SIMULATED REVENUES AS A % OF ACTUAL REVENUES, 1995 to 2001**

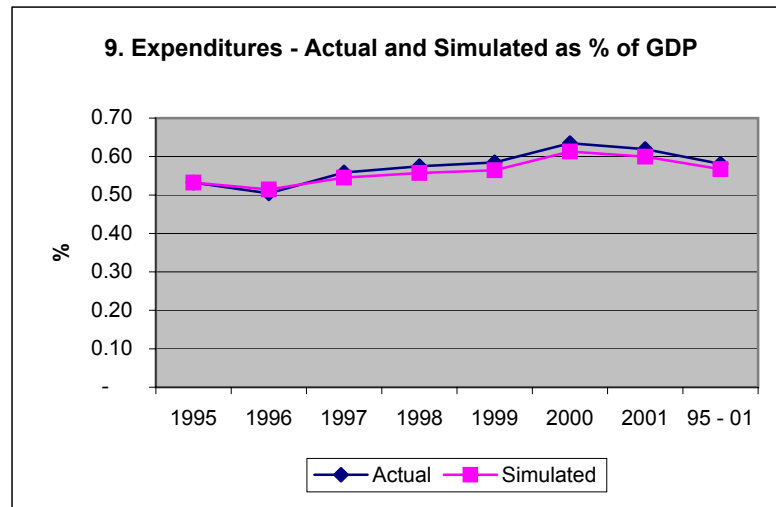
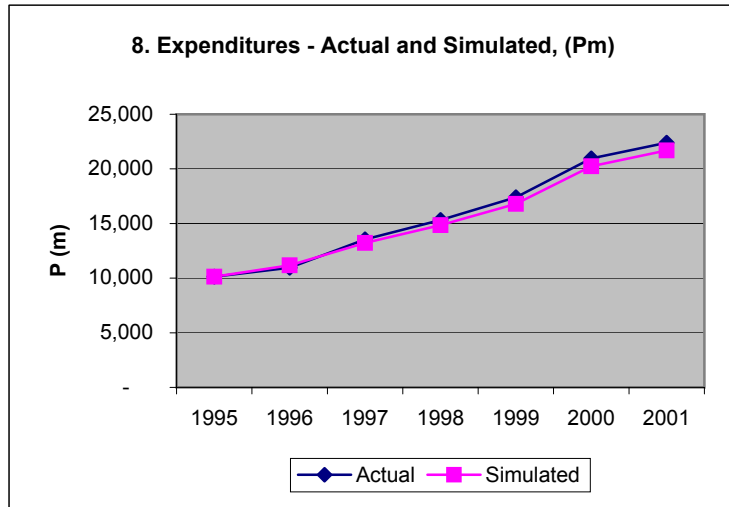
	1995	1996	1997	1998	1999	2000	2001	SUM 95 - 01
Real Property Tax	100.0	100.0	111.1	122.4	133.9	133.9	133.9	122.3
Special Education Fund	100.0	100.0	111.1	122.4	133.9	133.9	133.9	122.9
Transfer Tax	100.0	100.0	113.6	127.9	143.0	143.0	143.0	126.0
Idle Lands Tax	100.0	100.5	100.5	100.5	100.5	100.5	100.5	100.5
Special Levy for Public Works	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Capital Gains Tax	60.0	60.0	68.2	64.0	71.5	71.5	71.5	66.4
Estate Tax	100.0	100.0	110.0	120.0	130.0	130.0	130.0	116.1
Donors Tax	100.0	100.0	110.0	120.0	130.0	130.0	130.0	117.3
Stamp Tax on Documents	100.0	100.0	113.6	127.9	143.0	143.0	143.0	124.8
Value Added Tax (Sale and Lease of Property)	100.0	100.0	111.1	122.4	133.9	133.9	133.9	123.1
Income Tax (Income from Land Transactions)	100.0	100.0	111.1	122.4	133.9	133.9	133.9	122.1
Income from Forfeited Properties	100.0	100.0	106.0	106.0	106.0	106.0	106.0	105.7
Local Fees and Charges	100.0	130.0	131.8	134.9	137.7	140.2	141.8	133.7
Central Fees and Charges	100.0	101.7	101.0	102.3	103.1	102.5	102.1	101.8
<b>TOTAL</b>	<b>93.7</b>	<b>94.2</b>	<b>105.5</b>	<b>115.4</b>	<b>127.8</b>	<b>128.5</b>	<b>129.4</b>	<b>115.4</b>



**TABLE 18.**

**OPTION 2, TOTAL EXPENDITURES, ACTUAL AND SIMULATED, 1995 to 2001**

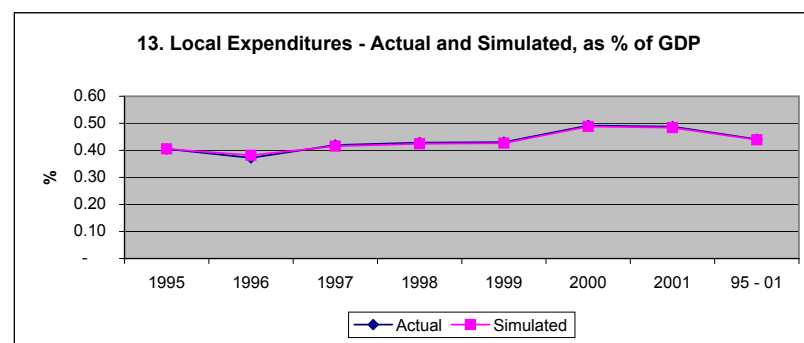
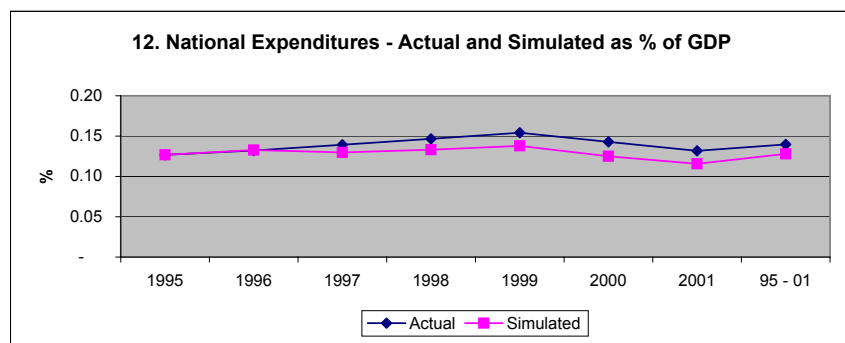
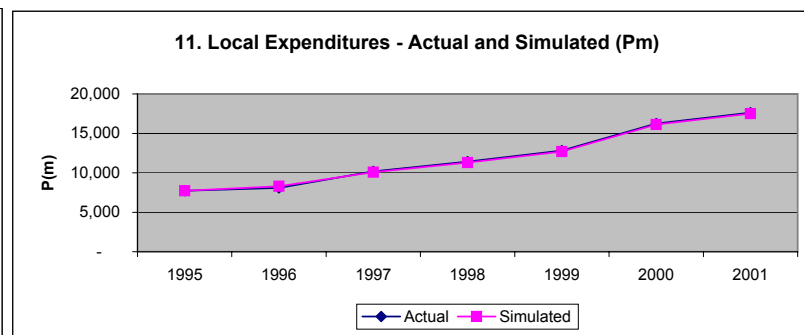
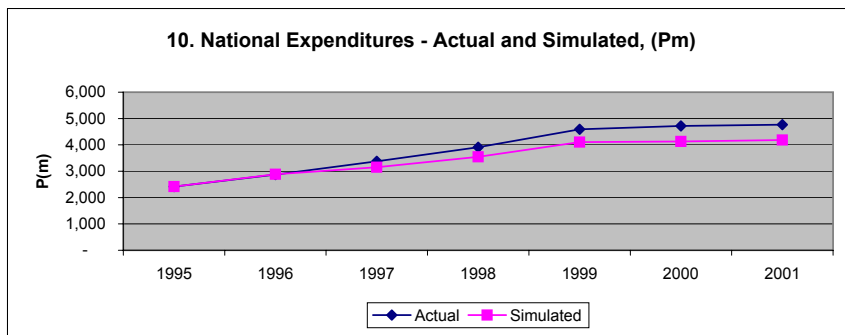
	1995	1996	1997	1998	1999	2000	2001	95 - 01
Actual Total Expenditures (P m)	10,142	10,956	13,552	15,321	17,404	20,961	22,397	110,732
Actual as % of GDP	0.53	0.50	0.56	0.57	0.58	0.63	0.62	0.58
Simulated Total Expenditures - (P m)	10,142	11,175	13,228	14,851	16,805	20,245	21,687	108,132
Simulated as % of GDP	0.53	0.51	0.55	0.56	0.56	0.61	0.60	0.57



**TABLE 19**

**OPTION 2. NATIONAL AND LOCAL EXPENDITURES, ACTUAL AND SIMULATED, 1995 to 2001**

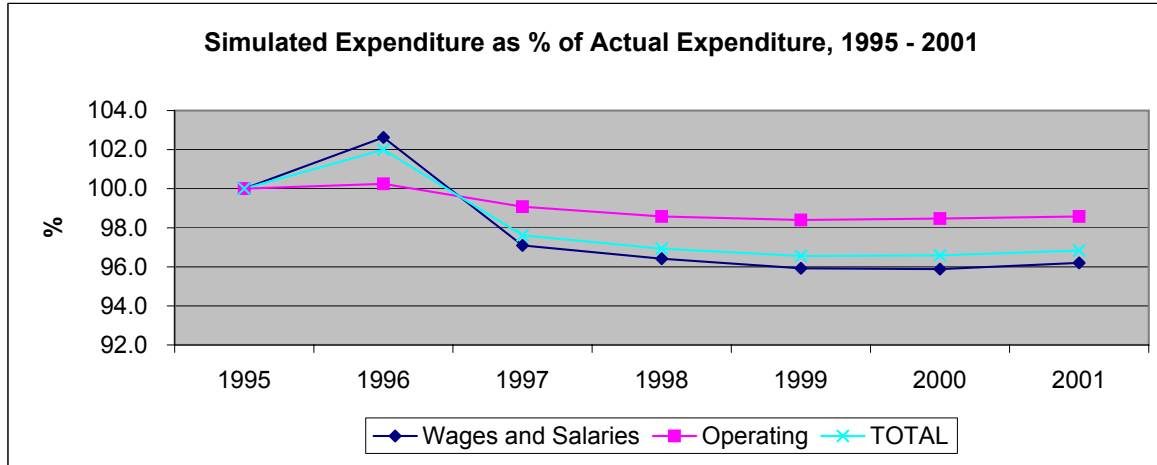
	1995	1996	1997	1998	1999	2000	2001	95 - 01
<b>1. National Expenditures</b>								
Actual National Expenditures (P m)	2,418	2,870	3,378	3,908	4,590	4,720	4,765	26,650
Actual as % of GDP	0.13	0.13	0.14	0.15	0.15	0.14	0.13	0.14
Simulated National Expenditures - (P m)	2,418	2,884	3,150	3,547	4,102	4,127	4,187	24,415
Simulated as % of GDP	0.13	0.13	0.13	0.13	0.14	0.12	0.12	0.13
<b>2. Local Expenditures</b>								
Actual Local Expenditures (P Millions)	7,724	8,085	10,174	11,413	12,814	16,241	17,631	84,082
Actual as % of GDP	0.41	0.37	0.42	0.43	0.43	0.49	0.49	0.44
Simulated Local Expenditures - (P m)	7,724	8,290	10,078	11,304	12,702	16,118	17,500	83,716
Simulated as % of GDP	0.41	0.38	0.42	0.42	0.43	0.49	0.48	0.44



**TABLE 20**

**OPTION 2. DISAGGREGATED TOTAL EXPENDITURES, ACTUAL AND SIMULATED, 1995 to 2001**

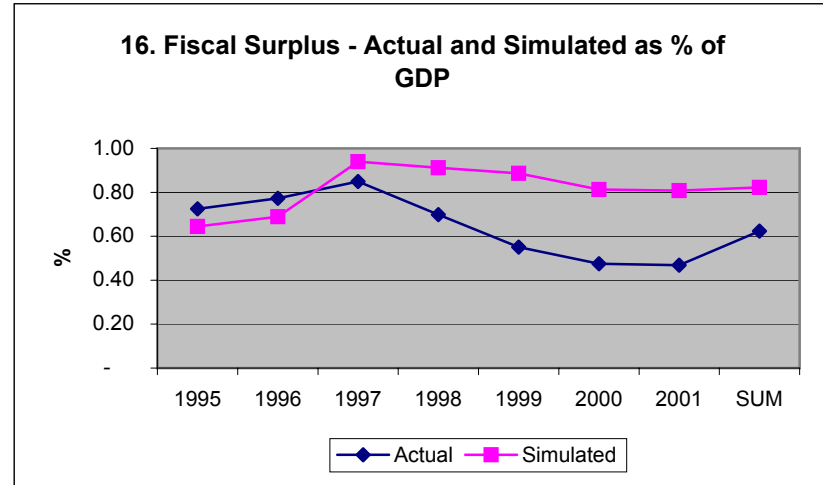
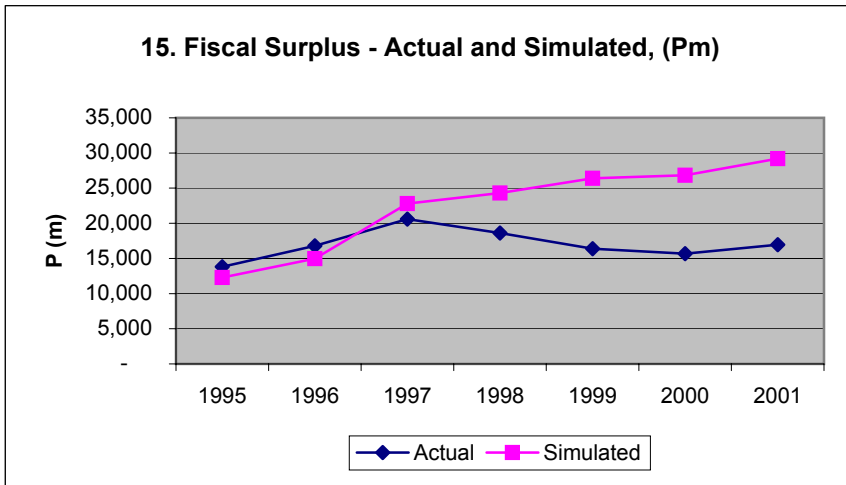
	1995	1996	1997	1998	1999	2000	2001	SUM 95 - 01
<b>1. Actual Expenditures (Pm)</b>								
Wages and Salaries	7,401	8,071	10,030	11,649	12,970	15,288	16,467	<b>81,876</b>
Operating	2,741	2,885	3,521	3,671	4,434	5,673	5,930	<b>28,856</b>
<b>TOTAL</b>	<b>10,142</b>	<b>10,956</b>	<b>13,552</b>	<b>15,321</b>	<b>17,404</b>	<b>20,961</b>	<b>22,397</b>	<b>110,732</b>
<b>2. Simulated Expenditures (Pm)</b>								
Wages and Salaries	7,401	8,283	9,739	11,232	12,441	14,659	15,842	<b>79,596</b>
Operating	2,741	2,892	3,489	3,619	4,363	5,586	5,846	<b>28,536</b>
<b>TOTAL</b>	<b>10,142</b>	<b>11,175</b>	<b>13,228</b>	<b>14,851</b>	<b>16,805</b>	<b>20,245</b>	<b>21,687</b>	<b>108,132</b>
<b>Simulated Expenditures as % of Actual Expenditures</b>								
Wages and Salaries	100.0	102.6	97.1	96.4	95.9	95.9	96.2	<b>97.2</b>
Operating	100.0	100.3	99.1	98.6	98.4	98.5	98.6	<b>98.9</b>
<b>TOTAL</b>	<b>100.0</b>	<b>102.0</b>	<b>97.6</b>	<b>96.9</b>	<b>96.6</b>	<b>96.6</b>	<b>96.8</b>	<b>97.7</b>



**TABLE 21**

**OPTION 2. TOTAL FISCAL SURPLUSES, ACTUAL AND SIMULATED, 1995 to 2001**

	1995	1996	1997	1998	1999	2000	2001	95 - 01
Actual Fiscal Surplus (P m)	13,805	16,790	20,604	18,620	16,388	15,689	16,946	118,843
Actual as % of GDP	0.72	0.77	0.85	0.70	0.55	0.48	0.47	0.62
Simulated Fiscal Surplus - (P m)	12,289	14,971	22,793	24,303	26,392	26,840	29,207	156,794
Simulated as % of GDP	0.64	0.69	0.94	0.91	0.89	0.81	0.81	0.82



**TABLE 22**

**OPTION 2. NATIONAL AND LOCAL FISCAL SURPLUSES, ACTUAL AND SIMULATED, 1995 - 2001**

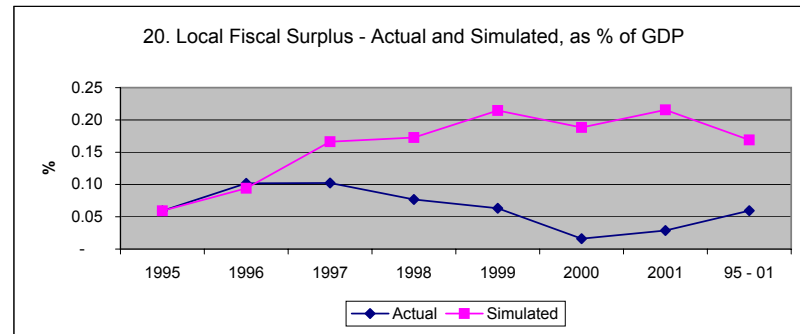
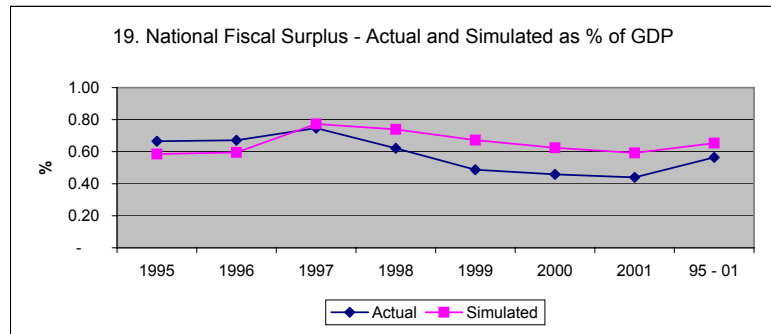
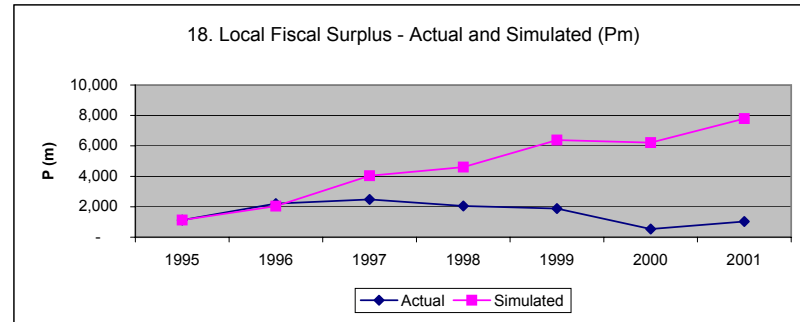
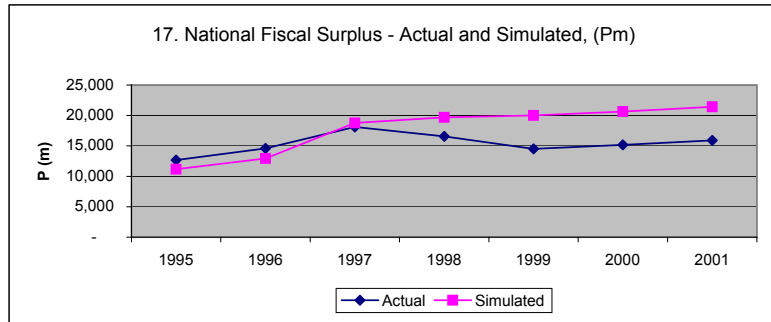
	1995	1996	1997	1998	1999	2000	2001	95 - 01
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**1. National Fiscal Surplus**

Actual National Fiscal Surplus (P Millions)	12,677	14,580	18,123	16,573	14,508	15,156	15,911	107,528
Actual as % of GDP	0.67	0.67	0.75	0.62	0.49	0.46	0.44	0.56
Simulated National Fiscal Surplus - (P m)	11,160	12,926	18,760	19,699	20,008	20,623	21,414	124,591
Simulated as % of GDP	0.59	0.60	0.77	0.74	0.67	0.62	0.59	0.65

**2. Local Fiscal Surplus**

Actual Local Fiscal Surplus (P Millions)	1,128	2,210	2,481	2,046	1,880	534	1,035	11,315
Actual as % of GDP	0.06	0.10	0.10	0.08	0.06	0.02	0.03	0.06
Simulated Local Fiscal Surplus - (P m)	1,128	2,045	4,034	4,604	6,384	6,216	7,793	32,203
Simulated as % of GDP	0.06	0.09	0.17	0.17	0.21	0.19	0.22	0.17



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### **Appendix 3. Characteristics and Run Results for Option 3**

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The main characteristics of Option 3 are set out in Table 23 which follows. With regard to results as indicated in chapters 4 and 5 the model firstly throws the results into a simulated data base for the years 1995 to 2001. The full simulated data base is not presented here. Rather the results sheets which are automatically prepared by the model are reproduced here in the eight (8) sets of comparative Tables (24 to 31) and Graphs which follow for Option 3. These largely tell their own story and are presented here without further comment, though some comparisons of the three different options are made in chapter 5 and some overall concluding comments are made in chapter 6.

**Table 23: Policy Variables for Base Case of Option 3**

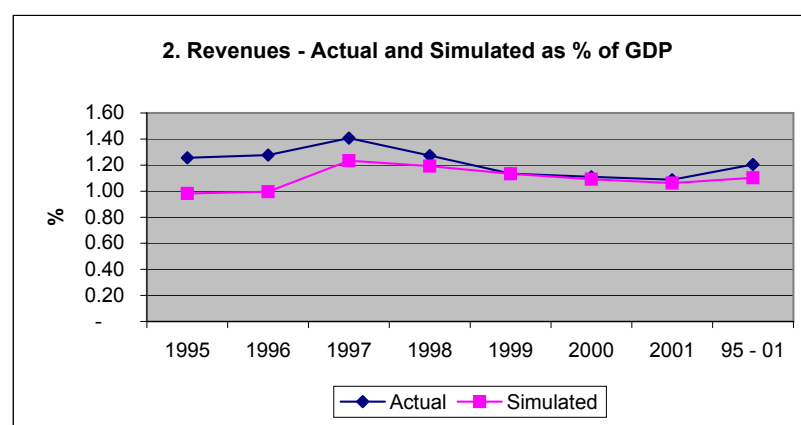
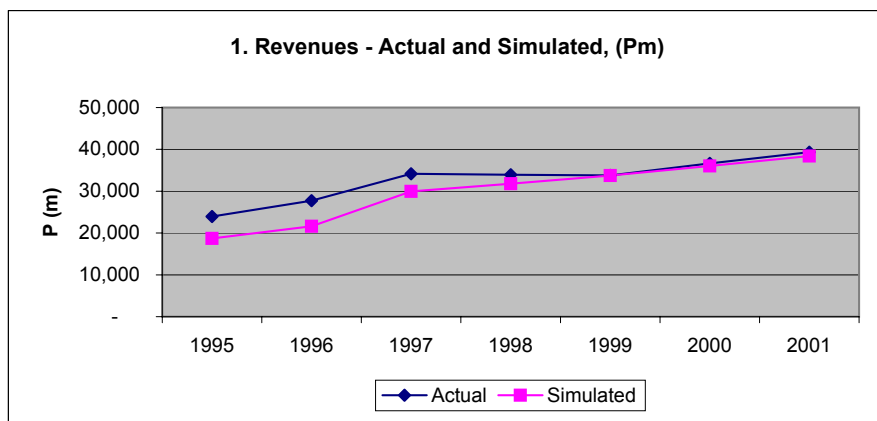
POLICY CHOICE	ACTUAL POLICIES 1995 – 2001							SIMULATED POLICIES 1995 – 2001						
	1995	1996	1997	1998	1999	2000	2001	1995	1996	1997	1998	1999	2000	2001
Capital Gains Tax	5.0	5.0	5.0	6.0	6.0	6.0	6.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Stamp Tax on Documents	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
Transfer Tax – Cities	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Transfer Tax – Non Cities	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Real Property Tax – Cities	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
RPT – Non Cities	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Special Education Tax	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Growth in ownership revenues (%)	n.a	n.a	n.a	n.a	n.a	n.a	n.a	0.0	0.0	1.0	2.0	3.0	3.0	3.0
Growth in transactions revenues (%)	n.a	n.a	n.a	n.a	n.a	n.a	n.a	0.0	0.0	3.3	6.6	10.0	10.0	10.0
Growth in revenues due to higher valuation effects (%)	n.a	n.a	n.a	n.a	n.a	n.a	n.a	0.0	0.0	10.0	20.0	30.0	30.0	30.0
Growth in National fees and charges (%) [Excludes LRA]	n.a	n.a	n.a	n.a	n.a	n.a	n.a	0.0	30.0	31.8	34.9	37.7	40.2	41.8
Growth in Local fees and charges post review (%)	n.a	n.a	n.a	n.a	n.a	n.a	n.a	0.0	30.0	31.8	34.9	37.7	40.2	41.8

**Note:** All three options presented in this Report assume an elasticity factor of 0.85 when an increase in a tax rate is being simulated; and an elasticity factor of 1.0 when a decrease in a tax rate is being simulated.

**TABLE 24**

**OPTION 3. TOTAL REVENUES, ACTUAL AND SIMULATED, 1995 to 2001**

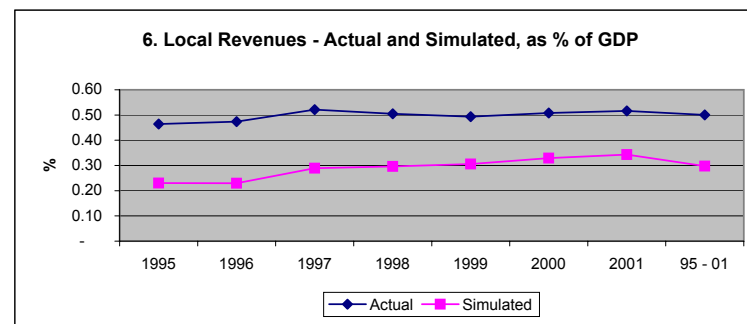
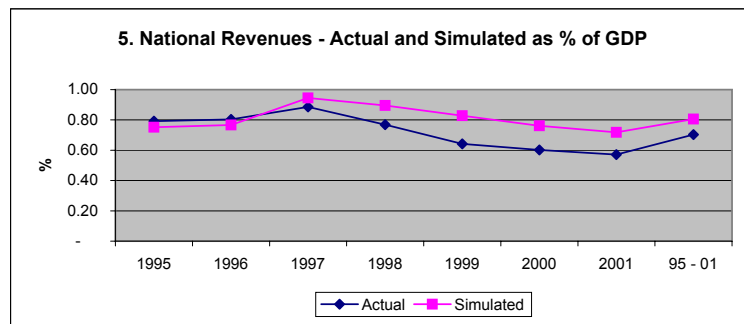
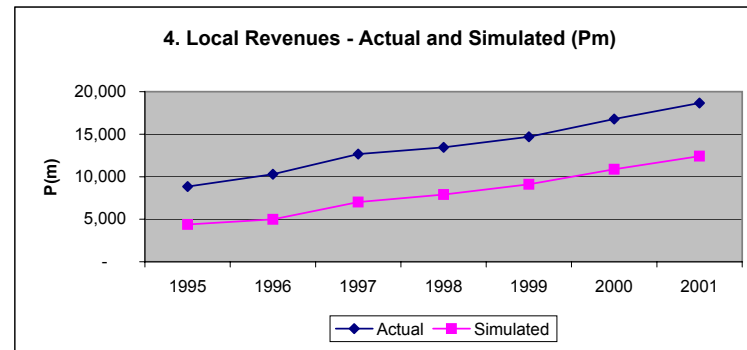
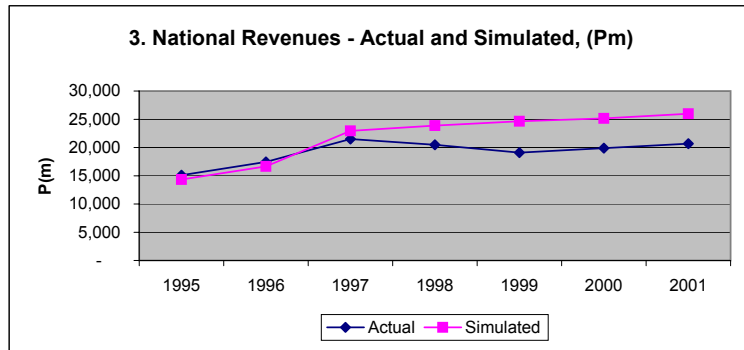
	1995	1996	1997	1998	1999	2000	2001	95 - 01
Actual Total Revenues (P m)	23,947	27,746	34,156	33,941	33,792	36,650	39,343	229,574
Actual as % of GDP	1.26	1.28	1.41	1.27	1.14	1.11	1.09	1.20
Simulated Total Revenues - Option 1 (P m)	18,722	21,626	29,954	31,775	33,742	36,041	38,396	210,257
Simulated as % of GDP	0.98	1.00	1.23	1.19	1.13	1.09	1.06	1.10



**TABLE 25**

**OPTION 3. NATIONAL AND LOCAL REVENUES, ACTUAL AND SIMULATED, 1995 - 2001**

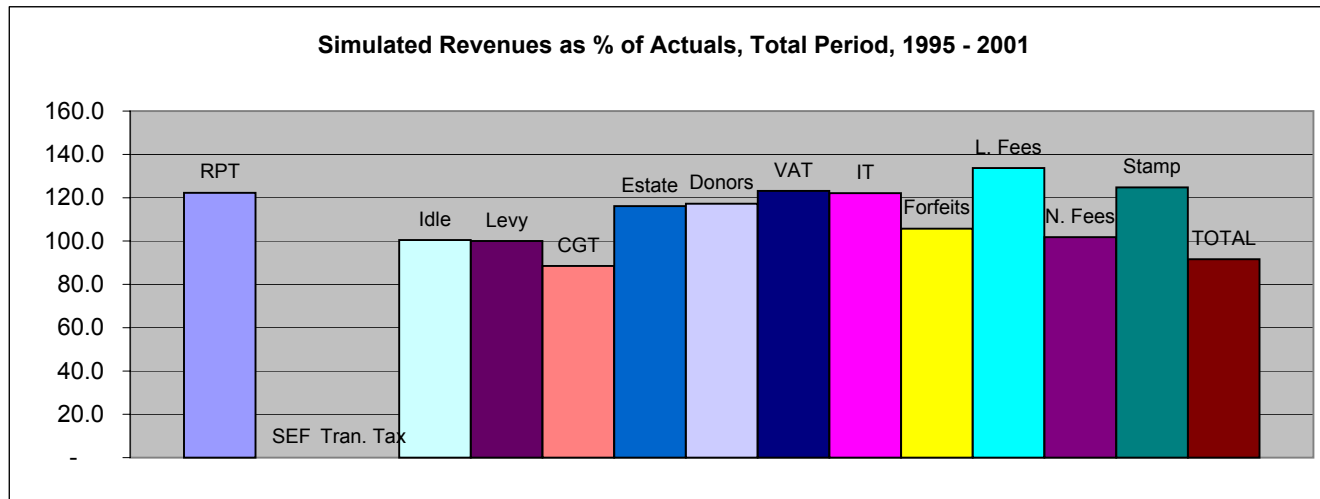
	1995	1996	1997	1998	1999	2000	2001	SUM 95 - 01
<b>1. National Revenues</b>								
Actual National Revenues (P m)	15,095	17,451	21,501	20,482	19,098	19,875	20,676	134,178
Actual as % of GDP	0.79	0.80	0.89	0.77	0.64	0.60	0.57	0.70
Simulated National Revenues - (P m)	14,337	16,644	22,942	23,878	24,638	25,160	25,985	153,584
Simulated as % of GDP	0.75	0.77	0.95	0.90	0.83	0.76	0.72	0.81
<b>2. Local Revenues</b>								
Actual Local Revenues (P Millions)	8,852	10,295	12,655	13,459	14,694	16,775	18,666	95,396
Actual as % of GDP	0.46	0.47	0.52	0.51	0.49	0.51	0.52	0.50
Simulated Local Revenues - (P m)	4,385	4,982	7,012	7,897	9,104	10,881	12,411	56,673
Simulated as % of GDP	0.23	0.23	0.29	0.30	0.31	0.33	0.34	0.30



**TABLE 26**

**OPTION 3. SIMULATED REVENUES AS A % OF ACTUAL REVENUES, 1995 to 2001**

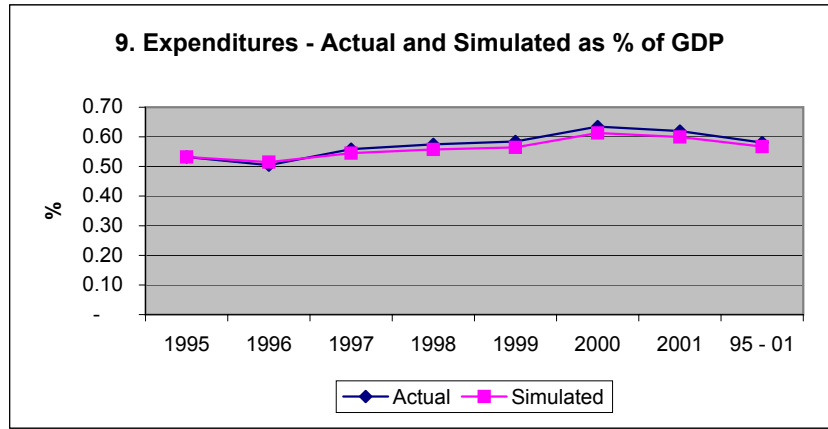
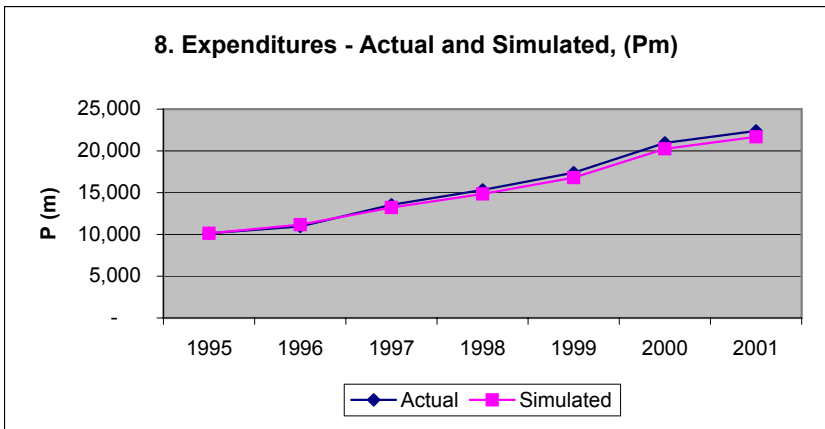
	1995	1996	1997	1998	1999	2000	2001	SUM 95 - 01
Real Property Tax	100.0	100.0	111.1	122.4	133.9	133.9	133.9	122.3
Special Education Fund	-	-	-	-	-	-	-	-
Transfer Tax	-	-	-	-	-	-	-	-
Idle Lands Tax	100.0	100.5	100.5	100.5	100.5	100.5	100.5	100.5
Special Levy for Public Works	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Capital Gains Tax	80.0	80.0	90.9	85.3	95.3	95.3	95.3	88.5
Estate Tax	100.0	100.0	110.0	120.0	130.0	130.0	130.0	116.1
Donors Tax	100.0	100.0	110.0	120.0	130.0	130.0	130.0	117.3
Stamp Tax on Documents	100.0	100.0	113.6	127.9	143.0	143.0	143.0	124.8
Value Added Tax (Sale and Lease of Property)	100.0	100.0	111.1	122.4	133.9	133.9	133.9	123.1
Income Tax (Income from Land Transactions)	100.0	100.0	111.1	122.4	133.9	133.9	133.9	122.1
Income from Forfeited Properties	100.0	100.0	106.0	106.0	106.0	106.0	106.0	105.7
Local Fees and Charges	100.0	130.0	131.8	134.9	137.7	140.2	141.8	133.7
Central Fees and Charges	100.0	101.7	101.0	102.3	103.1	102.5	102.1	101.8
<b>TOTAL</b>	<b>78.2</b>	<b>77.9</b>	<b>87.7</b>	<b>93.6</b>	<b>99.9</b>	<b>98.3</b>	<b>97.6</b>	<b>91.6</b>



**TABLE 27**

**OPTION 3. TOTAL EXPENDITURES, ACTUAL AND SIMULATED, 1995 to 2000**

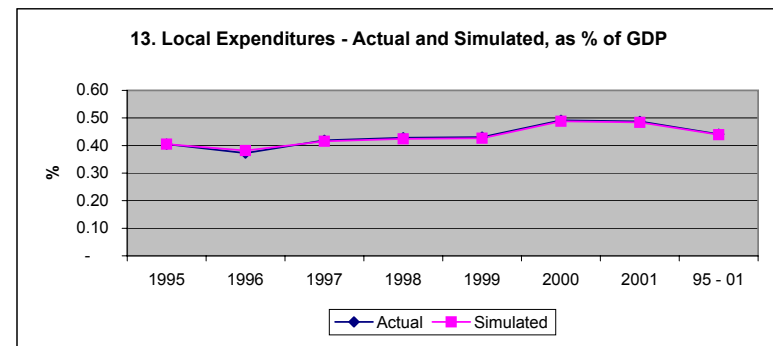
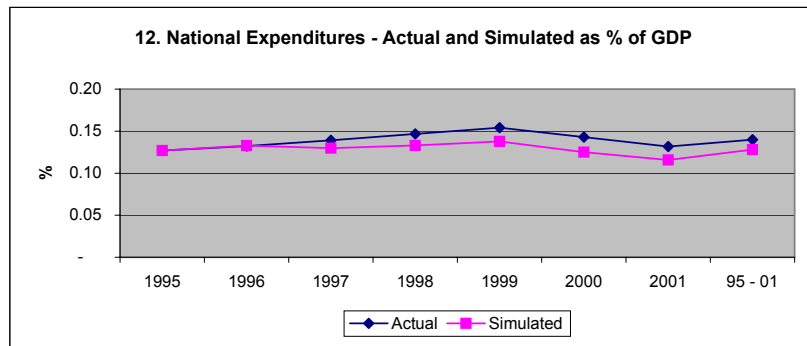
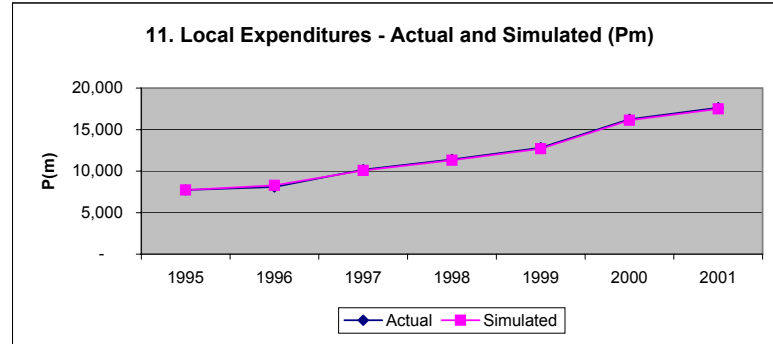
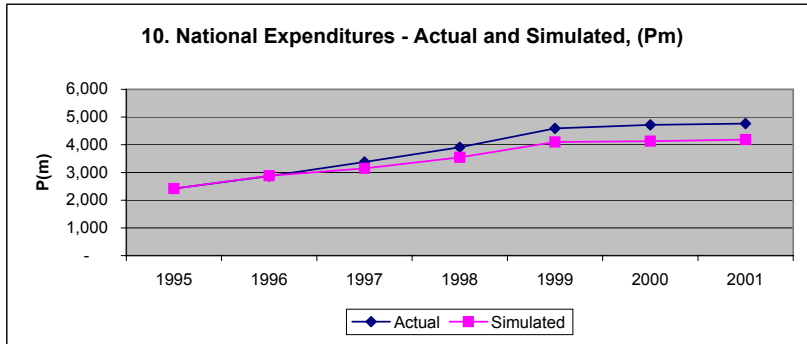
	1995	1996	1997	1998	1999	2000	2001	95 - 01
Actual Total Expenditures (P m)	10,142	10,956	13,552	15,321	17,404	20,961	22,397	110,732
Actual as % of GDP	0.53	0.50	0.56	0.57	0.58	0.63	0.62	0.58
Simulated Total Expenditures - (P m)	10,142	11,175	13,228	14,851	16,805	20,245	21,687	108,132
Simulated as % of GDP	0.53	0.51	0.55	0.56	0.56	0.61	0.60	0.57



**TABLE 28**

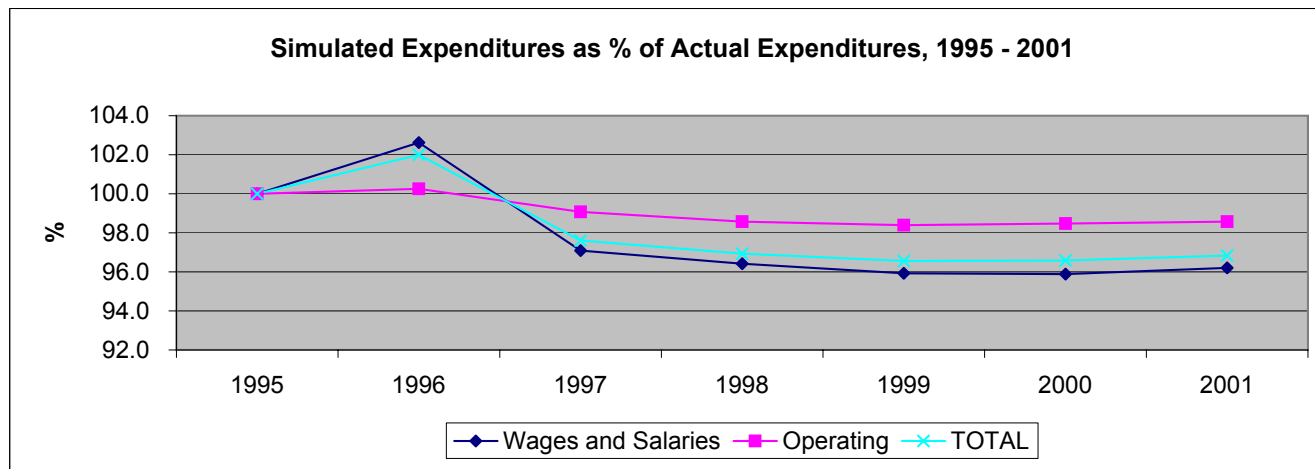
**OPTION 3. NATIONAL AND LOCAL EXPENDITURES, ACTUAL AND SIMULATED, 1995 to 2001**

	1995	1996	1997	1998	1999	2000	2001	95 - 01
<b>1. National Expenditures</b>								
Actual National Expenditures (P m)	2,418	2,870	3,378	3,908	4,590	4,720	4,765	26,650
Actual as % of GDP	0.13	0.13	0.14	0.15	0.15	0.14	0.13	0.14
Simulated National Expenditures - (P m)	2,418	2,884	3,150	3,547	4,102	4,127	4,187	24,415
Simulated as % of GDP	0.13	0.13	0.13	0.13	0.14	0.12	0.12	0.13
<b>2. Local Expenditures</b>								
Actual Local Expenditures (P Millions)	7,724	8,085	10,174	11,413	12,814	16,241	17,631	84,082
Actual as % of GDP	0.41	0.37	0.42	0.43	0.43	0.49	0.49	0.44
Simulated Local Expenditures - (P m)	7,724	8,290	10,078	11,304	12,702	16,118	17,500	83,716
Simulated as % of GDP	0.41	0.38	0.42	0.42	0.43	0.49	0.48	0.44



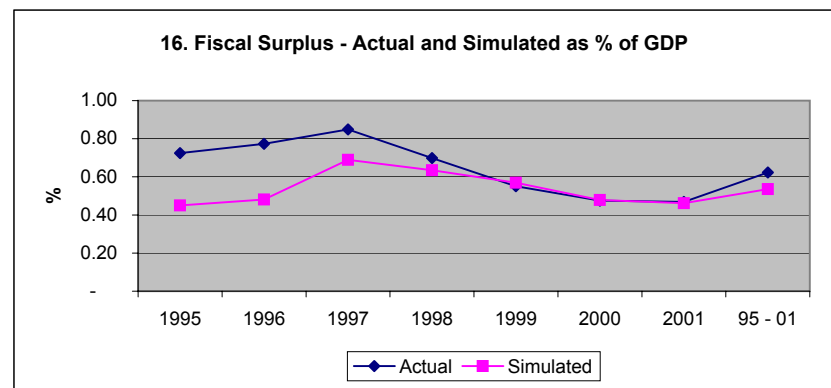
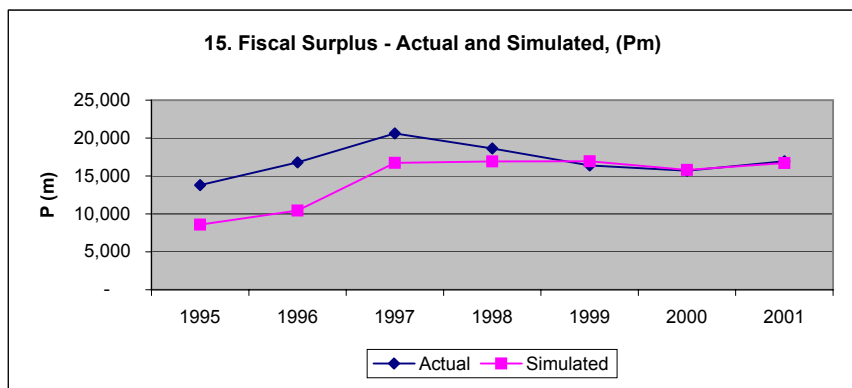
**TABLE 29****OPTION 3. DISAGGREGATED TOTAL EXPENDITURES, ACTUAL AND SIMULATED, 1995 to 2001**

	1995	1996	1997	1998	1999	2000	2001	SUM 95 - 01
<b>1. Actual Expenditures (Pm)</b>								
Wages and Salaries	7,401	8,071	10,030	11,649	12,970	15,288	16,467	<b>81,876</b>
Operating	2,741	2,885	3,521	3,671	4,434	5,673	5,930	<b>28,856</b>
<b>TOTAL</b>	<b>10,142</b>	<b>10,956</b>	<b>13,552</b>	<b>15,321</b>	<b>17,404</b>	<b>20,961</b>	<b>22,397</b>	<b>110,732</b>
<b>2. Simulated Expenditures (Pm)</b>								
Wages and Salaries	7,401	8,283	9,739	11,232	12,441	14,659	15,842	<b>79,596</b>
Operating	2,741	2,892	3,489	3,619	4,363	5,586	5,846	<b>28,536</b>
<b>TOTAL</b>	<b>10,142</b>	<b>11,175</b>	<b>13,228</b>	<b>14,851</b>	<b>16,805</b>	<b>20,245</b>	<b>21,687</b>	<b>108,132</b>
<b>Simulated Expenditures as % of Actual Expenditures</b>								
Wages and Salaries	100.0	102.6	97.1	96.4	95.9	95.9	96.2	<b>97.2</b>
Operating	100.0	100.3	99.1	98.6	98.4	98.5	98.6	<b>98.9</b>
<b>TOTAL</b>	<b>100.0</b>	<b>102.0</b>	<b>97.6</b>	<b>96.9</b>	<b>96.6</b>	<b>96.6</b>	<b>96.8</b>	<b>97.7</b>



**TABLE 30**  
**OPTION 3. TOTAL SURPLUSES, ACTUAL AND SIMULATED, 1995 to 2001**

	1995	1996	1997	1998	1999	2000	2001	95 - 01
Actual Fiscal Surplus (P m)	13,805	16,790	20,604	18,620	16,388	15,689	16,946	118,843
Actual as % of GDP	0.72	0.77	0.85	0.70	0.55	0.48	0.47	0.62
Simulated Fiscal Surplus - (P m)	8,580	10,451	16,727	16,924	16,938	15,796	16,709	102,125
Simulated as % of GDP	0.45	0.48	0.69	0.64	0.57	0.48	0.46	0.54



**TABLE 31**

**OPTION 3. NATIONAL AND LOCAL SURPLUSES, ACTUAL AND SIMULATED, 1995 - 2001**

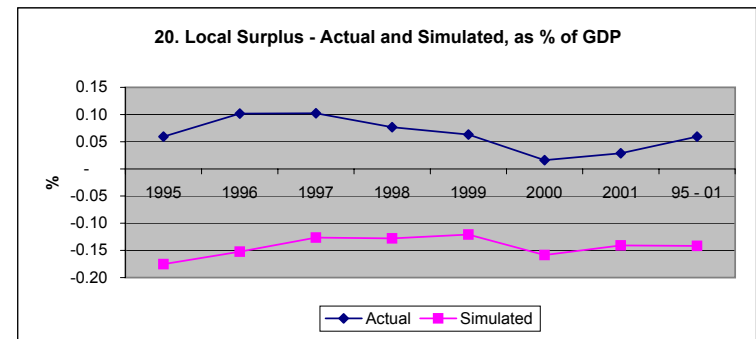
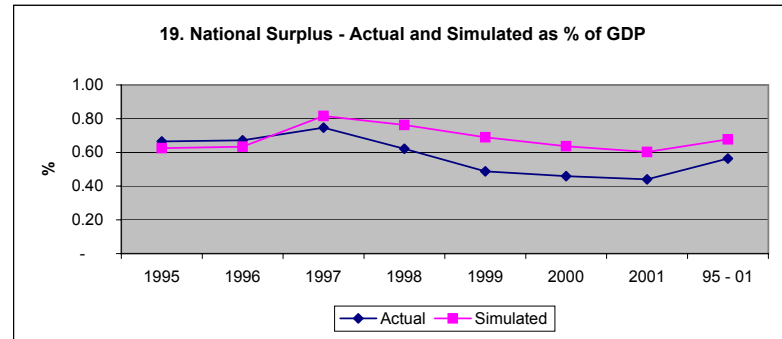
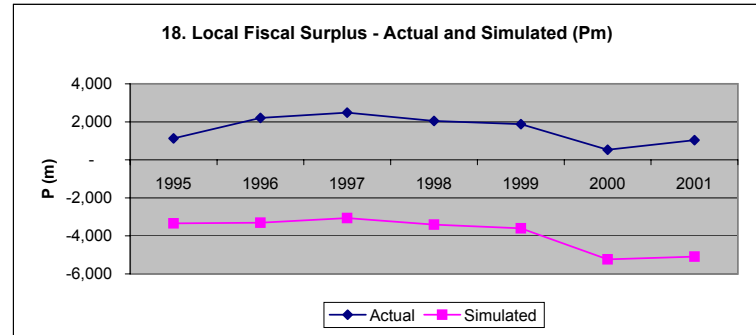
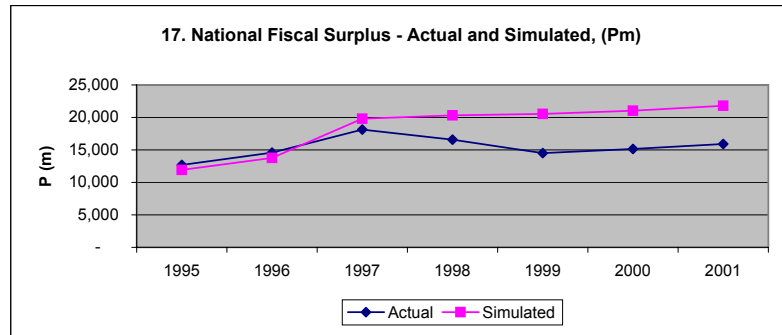
	1995	1996	1997	1998	1999	2000	2001	95 - 01
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**1. National Fiscal Surplus**

Actual National Fiscal Surplus (P Millions)	12,677	14,580	18,123	16,573	14,508	15,156	15,911	107,528
Actual as % of GDP	0.67	0.67	0.75	0.62	0.49	0.46	0.44	0.56
Simulated National Fiscal Surplus - (P m)	11,919	13,760	19,792	20,331	20,536	21,033	21,799	129,169
Simulated as % of GDP	0.63	0.63	0.82	0.76	0.69	0.64	0.60	0.68

**2. Local Fiscal Surplus**

Actual Local Fiscal Surplus (P Millions)	1,128	2,210	2,481	2,046	1,880	534	1,035	11,315
Actual as % of GDP	0.06	0.10	0.10	0.08	0.06	0.02	0.03	0.06
Simulated Local Fiscal Surplus - (P m)	- 3,339	- 3,308	- 3,066	- 3,406	- 3,598	- 5,237	- 5,089	- 27,043
Simulated as % of GDP	- 0.18	- 0.15	- 0.13	- 0.13	- 0.12	- 0.16	- 0.14	- 0.14



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## **Appendix 4. Model User's Operational Guide**

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This Appendix provides brief notes for those interested in using the model. It has been supplemented by a briefing session for interested members of the Finance and Fees Interagency Group and the Project Team.

### **1. Basic Prerequisites for Using the Model**

The model is designed and run in Microsoft Excel so a basic understanding of EXCEL is required. This knowledge only needs to be basic. You do not need to be an advanced EXCEL User. You also need a disc or CD on which a copy of the model's EXCEL file is located. These discs have been distributed to interested persons and further copies have been left at the Project Office at DENR.

### **2. Opening the Model File and Finding Your Way Around the File**

The model is contained fully within a single EXCEL file which is called: LAMP – Run. To get started you open up this file the same way you would open up any other EXCEL file. Different parts of the model are contained in eleven different sheets of the file. Each of these different eleven sheets can be accessed by the tabs labeled at the bottom of each sheet. The eleven sheets cover the following different matters:

Sheet 1 is the data base. This sheet contains all the necessary financial data on all the organizations in the land administration sector for the period 1995 – 2001. For each organization it contains data on (a) Revenues; (b) Expenditures; (c) Fiscal Balance. The data base should be updated from time to time as newer or better historical information becomes available, but for the moment it is complete and up to date.

Sheet 2 is the Sensitivity Choice Sheet. For most users this is the only sheet where they will have to enter any information into the model. This sheet contains a choice box which requires the user to make selections about different choice variables. The choices that have to be made are set out in section 4 below. It is important that choices are made for every slot in the choice box. Otherwise the model will not give complete results.

Sheet 3 is the Run Sheet. This sheet presents the simulation results of particular runs. Once your sensitivity choices have been entered into Sheet 2 the model automatically reworks the data base and represents it in the work sheet as the now simulated data base for 1995 to 2001. Users will not need to enter this sheet

unless they want to extract results in addition to those which the model prepares automatically in the Results Sheets (referred to below). Where additional information is required simply enter the Run Sheet to extract it. If there is a need to use the Run Sheet it is likely that you will want to compare something in the simulated run with something in the initial data base. This can be done by comparing the relevant cells of sheet 3 with the relevant cells of sheet one. Formulae can be developed to do these comparisons. But remember you do not need to do this for the standard results sheets which are prepared automatically in the model – only if you need something that is not in the standard Reports.

Sheets 4 to 11 are the Standard Results Sheets (called Results Sheets 1 to 8). In each of these eight sheets simulation results are automatically prepared each time a new set of sensitivity choice variables are entered into the choice box in Sheet 2. Results are presented in terms of a standard table and a set of standard graphs. You can either view the results on your computer or alternatively you can print them out. To print out a particular results sheet simply hit the print button within that particular sheet. It is ready to print out. Results sheets 1 to 8 cover the following specific parts of the results:

- Results Sheet 1 compares simulated total revenues with actuals;
- Results Sheet 2 compares simulated Local and National revenues with actuals;
- Results Sheet 3 compares simulated revenues by type of revenue with actuals;
- Results Sheet 4 compares simulated total expenditures with actuals;
- Results Sheet 5 compares simulated Local and National expenditures with actuals;
- Results Sheet 6 compares simulated total expenditures by type of expenditure with actuals;
- Results Sheet 7 compares simulated total surplus (net fiscal effect) with actuals; and
- Results Sheet 8 compares simulated Local and National surpluses (net fiscal effect) with actuals.

Sheets 12 to 14 are the Comparison Results Sheets (called Results Sheets 9 to 11).

These three sheets are designed to compare the results of completely different runs or scenarios. For example the TOR for the current assignment specifically

required three options to be run and compared. The way to do this with the current model is as follows:

- Enter the relevant selection options for Option 1 in the choice box in Sheet 2;
- Print out all 8 standard results sheets;
- Save the file of that run with a new name (e.g. Run Option 1);
- You then need to transfer across from your run output to the standard data comparison Tables in Sheets 12, 13 and 14 the required information (essentially summary information about revenues, expenditure and surpluses). This information can be entered across manually or it can be copied across using the copy facility of your computer;
- Then repeat the above four steps for both of Options 2 and 3.

When you have finished these steps you will have a set of tables comparing revenues, expenditures and surpluses under the three different options – or more Options if you prefer. Once the basic data is entered into the Tables in the three Comparison Results Sheets graphs will automatically be produced. Each of these three sheets can be printed by simply hitting the print button within the sheet you want to print.

### **3. Structural Features of the Model You Cannot Easily Change**

Structural features of the model which are common to all option runs have been summarized at Section 2.2 of this Report. Refer to them there if you want to know what they are. If you want to change some of these standard features / assumptions then you will need to change structural parts of the model in all relevant places. This would require some proficiency in the use of EXCEL but should not be too difficult for someone with reasonable EXCEL proficiency and a good understanding of how the model is set up.

### **4. Sensitivity Choice Variables that You Can Easily Change**

The main sensitivity choice variables for which a selection must be made in Sheet 2 for every run are as follows:

- Tax elasticity estimates;
- Capital Gains Tax;
- Stamp Tax on Documents;

- Transfer Tax – Metro Manila / Cities;
- Transfer Tax – Non Cities;
- Real Property Tax – Metro Manila / Cities;
- Real Property Tax – Non Cities;
- Special Education Fund Tax;
- Growth (%) in National fees and charges following proposed fees review (but excluding LRA);
- Growth (%) in Local Government fees and charges following proposed review;
- Growth in revenues due to effects of higher valuations flowing from proposed institutional / administrative reforms;
- Growth in ownership revenues due to effects from growth in titles and transactions; and
- Growth in transaction revenues due to effects from growth in titles and transactions.

#### **5. Reviewing and Printing the Standard Results Reports**

The procedures have been set out at 2 above. Once you have undertaken a particular run simply enter the results sheet(s) that you want the information on. If you want to print then just hit the print command within the particular sheet(s) you want to print.

#### **6. Comparing the Results of Different Scenario Runs**

The procedures have been set out at 2 above. In short you enter in the relevant parts of the blank tables in Results Sheets 9, 10 and 11 the relevant summary information from particular option runs. Once the basic information on different option runs has been entered graphs are automatically prepared. If you want to print then just hit the print command within the particular sheet(s) you want to print.