Staff Papers Series

MINNESOTA MODIFIED MISSISSIPPI STATE BUDGET GENERATOR (MNMMSBG)

by

Earl I. Fuller

Lᴍ

Department of Agricultural and Applied Economics

January 1989

MINNESOTA MODIFIED MISSISSIPPI STATE BUDGET GENERATOR (MNMMSBG)

by

Earl I. Fuller

University of Minnesota

Introduction

This document is an addendum to the <u>Mississippi State Budget Generator Users Guide</u>[1]. The Mississippi State Budget Generator is a relational data base system primarily for the computation of unit crop budgets. It is an easy to use system. It is made up of a set of modules that develop, modify and display the associated set of data files. Other modules develop the budgets themselves and display them in a variety of detail depending on need or application. The results are understandable displays of crop data structured in ways to facilitate economic analysis and educational use for farm planning and control.

The MSBG system is well designed. It is easy to use. It is speedy and works well on a variety of personal computer configurations. While the hard disk and 640k of memory can be used to speed the operation somewhat, two floppy disks and 256k are adequate. The modifications in MN MSBG are made in the spirit of minor enhancements to the original, after all "there is no such thing as a completed computer program!"

Minnesota Modifications

The modifications at Minnesota fall into several categories. Some increase the flexibility of the system to work with various printers and to

---

---

[1] Spurlock, Stan R., Laughlin, David H., Walden, W. Charles, and Parvin, David W. <u>Mississippi State Budget Generator User's Guide</u>. Dept. of Ag. Econ, Mississippi State University, Mississippi State, MS 39762

internalize the diversion of output to a text file. Some add clarity to error messages. Others modify the structure of the budget displays. The budget display modifications made to the GNRATE4 module in particular were done to better model the asset fixity conditions of an owner operated type agriculture. Changes made to land and full-time labor items permit them to now be treated as allocated overhead to be displayed in the durables section. Previously they would most likely be treated as either cash expenses or as residuals. If it were economically valid to do so, they still could be.

Some terminology was modified to be more consistent with the marginality principles of partial budget type use. Partial budget use needs to recognize cash flow (liquidity) as well as profitability considerations in unit budget data structure. Each of these types of modifications and the related implications for categorizing or structuring input are discussed in the sections to follow.

The system is now in complied machine language form, i.e. .EXE form. On a two floppy drive system, initialization is as follows using a special utilities disk in the A:\ drive: a CONFIG.SYS sets the required number of file and buffers. AUTOEXE.BAT brings up the system, calls GOBUDAB.EXE which provides the user with a "change the disk message", sets the default drive to B:\ and calls MNMMSBG, the controlling module, on that drive. See the section on additional software for more details. On a hard drive system a BUD.BAT file calls MNMMSBG directly.

Changes Made to Facilitate Processing

A feature has been added to permit the user to divert all GNRATE4 and PNTABLE module's output to text files. This was done so that the output could be easily incorporated into other documents, either through word processing or through the use of laser printers and other desk top printing technology. This change necessitated the definition of two additional .DAT files. A choice is presented to the user prior to output production asking if the output file option is desired, and if so, what file name is to be used. The extension in the file name is automatic. It is .BUD for budgets and .TBL for data tables.

Because memory is cleared between budgets this necessitated definition of an additional .DAT file called WHEREPRT.DAT. This (#13) file keeps the current file name from budget to budget in GNRATE4.

WHEREPRT.DAT is used to do some other things. It carries the parameters that change the printer instructions from regular 80 column print to condensed print, when required, and also form feed. This file may be changed with an editor in order to change these parameters. They are currently set for Epsom compatible printers. The author's preference is to use condensed print for most if not all tables.

This file also contains one additional variable. This parameter designates the disk drive\directory where the budget data is to be found by this system. This same default data drive is also used to capture the resulting budgets if they are written to disk. Consequently disk space for some applications can

4

become limiting. This parameter is currently written as A:\. The file as read at the start is: NONE, 12, 15, 18, A:\

> NONE specifies that the printing option is not initially specified,
> 12 specifies normal 80 column print is desired (Epson standard) on narrow tables,
> 15 specifies 130 column if condensed print is desired (Epson standard),
> 18 specifies the ASCII character for causing a printer form feed,
> A:\ specifies the default drive for the budget data & text file output.

> The user should note that all budget data files are named BUDGET.DAT. This means that only one set of budgets can exist on one directory (or floppy disk).

The system utilities disk for the MNMMBG system also contains a .BAT file called ASSIGNAB.BAT. This file contains the capability of assigning to the system an instruction to reference the B drive at any time the A drive is referenced by the program. It accomplishes much of the same thing.

The real potential for the use of this feature exists with using memory resident disk drives for the budget data and for output. This could speed processing somewhat as well as reduce the likelihood of encountering disk space limitations in processing files of over 30 budgets. Consult your operating system users manual for further instructions on the use of these features. The current version has not been programmed to permit the reading of budget data from one drive and the writing of the results to another. If this feature would be useful, let this author know. A modification could be easily made.

Changes in the Error Handling

Several of the various modules now have more explicit error message

presentations. Error messages are now also sent to the printer. This author would appreciate hearing from anyone who sees other error messages. Chances are high that any errors displayed are due to an inconsistency between the input data and the budget data file references. They usually occur after one has updated one or more of the data files and has not coded a budget data file section in a consistent fashion. Differences in code numbers between the two often times will lead to attempts to divide by zero or to find an item which does not exist in the related .DAT file.

Error 67, "too many files" can occur whenever the module in use is trying to open over three files unless a CONFIG.SYS with FILES - 15 or more was used at system startup.

The following is a list of BASIC line numbers which can provide an indication as to which data files are involved when the error is in GENRATE4.EXE.

GENRATE4 Line Number	Error Number	.DAT File in Use	Suggestions
1130 - 1140	#5	PARAMETER	Missing or alpha data?
1350 - 1490		BUDGET	
1500 - 1560			
2920 - 3130			
1840 - 1860		OPTNAME	
1870 - 2280		IMPLEMENT	
1960	#11	IMPLEMENT	Divide by zero - missing code
2290 - 2540		SELFPROP	
2550 - 2790		DURABLES	Outside variable dimension - code No.?

2640	#9	DURABLES	
2800 - 2910		OPINPUT	
2870	#9	OPINPUT	Check code numbers
3260	#9		
4452	#75	FACTFILE	No disk in drive for output?
4850	# 9	BUDGET	Bad month in data entry?

Changes Made to the Budget Displays

The changes made fall into three categories. Some are intended to clarify
the viewers understanding of the results. For example, the word "expense"
appears instead of the word "cost" in several instances. This is to make it
clear that purchased input used up in the cropping cycle are indeed expenses
from an annual accounting standpoint and are consumed in the production
process during the production cycle.

The term "fixed cost" has been eliminated. After all, a cost is not fixed if
the asset quantity it represents is worth varying. The term "allocated
overhead" has been used to make it clear to the reader that the values
reflect judgment concerning the economic opportunity to use those resources
elsewhere. The dollar value assigned to an existing unit of these budgets
are in the final analysis a judgment. Machinery overhead per acre, for
instance, is influenced by the number of acres over which that machine or
machines are assumed to be used. The assumptions about allocations made in
developing these budgets are of questionable validity in any particular farm
situation. Similar terms have been used to attempt to make it clear to the

7

user that such allocations have little validity for purposes of analyzing
crop planning, control or marketing alternatives. Inferences to any size
operation other then one in the budget is erroneous unless there are neither
economics or diseconomics.

Any calculation of average total cost per unit of production in these budgets
or elsewhere have this problem. The displays may be of some interest to
people concerned with the industry and its performance, but the data
contained in the allocation of overhead section serve little purpose
otherwise. Accounting system allocations suffer from the same difficulties
and are of equally questionable value.[2]

Some of the changes made either simplify the displays as is the case in MSBG
tables .c and .i which are now printed on one page as tables i.1 and i.2 in
MNMSBG. They now have less data but more footnotes. Other tables have been
modified to reflect the general nature of the asset fixity conditions
outlined above. The intent was to improve the use of these data for planning
and control applications. Other usage and options such as the use of
residuals should not be affected. Table .c is now compatible with the
FINPACK crop data bank structure.

---

[2] Harrington, David H., "Costs and Returns: Economic and Accounting
Concepts", _Agricultural Economics Research_, ERS-USDA, Vol. 35, No. 4,
October 1983

Hoffman, George and Gustafson, Cole, "A New Approach to Estimating
Agricultural Costs of Production", _Agricultural Economics Research_, ERS-
USDA, Vol. 35, No. 4, October 1983

Labor as a Fixed Resource

Full time labor can now be treated as if it were a fixed asset for purposes of making cropping decisions. It need not be valued as a cash operating expense directly related to an acre of a specific crop. Occasional labor, however, can still be valued as an operating expense under an assumption that it would not be hired if it were not used on each acre described in a budget.

An operating interest calculation of interest cost for six months on the cash operating expenses has been added to the cash expense part of the display as a default option in a way consistent with the way FINPACK data banks for the long run are developed.

While any and all resources may be treated as residuals as they were in the original Mississippi State Budget Generator, the structure now presumes that they will usually be valued at opportunity cost rates as part of the allocated overheads.

Fact Sheet Preparation

An additional hidden feature to the program was added. If table .d output is requested and output is diverted to a file, then an additional output file is created. This file, FACTFILE.FSF, is created on the budget input disk. This file contains coded data for use by another program outside this system. That program, FSLAYOUT, restructures the output into the form used on the Minnesota "What to Grow" fact sheets. This form presents up to eight budgets per fact sheet. The user should know that the next time output is requested

9

when using that same BUDGET.DAT disk the existing FACTFILE.FSF is deleted, making room for an updated file. The fact sheet form prepared by FSLAYOUT is also created as a text file and after appropriate modification to the column labels (titles to the contained budgets) is ready for word processing or printing. The program FSLAYOUT is found on the MNMMSBG system utilities disk.

Input Modifications

The third area of modification concerns data requirements. Most input modifications are self explanatory when or if presented to the system user. The parameter file now has some additional data requirements. Land charge coding as durables is required to activate the above discussed handling of these allocated overheads to owned land. Land taxes can be inputed as a durable on a per acre basis into each budget. The farm land use value of land is in the other special durable. In most Minnesota applications, farm use value is approximately the capitalized value of rent. Consequently the annual cost of ownership is assumed to be approximately equal to the cost of rent. Alternatively, land charges can be treated as land rent and then the land taxes and land charges lines are not included in the allocated overhead section. List a budget input section to see how this feature works.

Labor is handled much like an allocated overhead or durable if the item to which it is coded has the unit "Hour". If coded "hour", "hr", "HOUR", etc. it is still treated as a cash expense. Both "Land Charges" and "Hours" can now be treated as special durables much as machinery overheads are. So can

10

other durables starting with "land   " and "property taxes".

Floppy Disk Capacity Limitations

If the writing results to disk feature is not used, 360k disks should hold 50
to 60 crop budgets. When results are written to disk, less budgets per disk
are possible. Even if only the outputed table is requested and copied to the
disk, thirty budgets is a practical limit. Obsolete .BUD files should be
deleted before new analyses are done. Use the SDIR command at the system
level to check for free disk space. Have some extra formatted disks
available.

BUDNOTES.DOC - As Retrieved, Displayed and / or Printed With PRINTDOCS :

BUD - (MNMMSBG) - January 1989   E.I.F.

Current Description of the MNMMSGG system found on the BUDUTILITY disk and
elsewhere is as follows:

The Minnesota Modified Mississippi State Budget Generator is now used
to develop the crop budgets as distributed on floppy disks and Fact Sheets.
Some of Agronomist Kent Crookston's station data were analyzed with it to
farther test its flexibility. Over 30 specialty (alternative?) crop budgets
were built last summer and are now being reviewed.

Users find the system flexible and quick and easy to use.   By now it
is well tested.   If you are interested in using it to modify our, or build
your own budgets, contact: Extension Farm Management at (612) 625-1226 or
249 COB, University of Minnesota, St. Paul   55108.

Ten display formats including a FINPACK like one are now part of the current version. All are consistent with economic marginality and the partial budget approach in one way or another. None of them focus on "Cost of production" hence all are useful decision aiding tools. Proper display selection depends upon the question(s) being raised. Some show more detail for control type use. Others focus on strategic planning use.

Extension Farm Management will continue to update all base files each year and to update over 300 different crop budgets each year. You can or may still want to do more localization or to provide greater detail. Budgets will be added upon request, providing input data are available.

The economics of new technology and improved production practices may be better taught or compared economically by localized illustration.
(End of BUDNOTES.DOC)

Other Programs and Files on the BUDUTILITY Disk. MNMMSBG System :

README.DOC - The Minnesota Modified Mississippi State Budget System

Type SDIR , a command on this disk and note PRINTDOCS. Use it or the BT command to explore the .DOC files which explain the related programs.

Note the AUTOEXEC.BAT FILE which will boot the system with this disk or one containing SYSTEM files and COMMAND.COM . There must also be a CONFIG.SYS specifying at least ;

```
FILES = 15
BUFFERS = 10            (many hard drive machines do this.)
```

It calls a program GOBUDAB that sets drive B:\ as default and then calls BUD.BAT on that drive. GOBUDAB.EXE like all MNMMSBG programs uses BRUN10.EXE routines. Once BRUN10 is accessed it remains resident as long as .EXE files are in use.

Then the BUDUTILITY disk should be replaced with a BUDGET.DAT disk in the A:\ drive.

On a hard drive machine PATH to BRUN10. Copy the MNMMSBG disk to a directory and type BUD to start the system. Load the BUDGET.DAT disk in the A:\ drive unless you want to use the ASSIGN command to use the B:\ drive or a memory disk. It will be slightly faster than floppy drive machines.

Have the MSBG User's Guide and the MNMMSBG Addendum handy for reference. Make backup disks of all files on all 3 disks! Back up your BUDGET.DAT disk frequently also.   E. I. F.   U/M   12/29/88

(End of README.DOC)

BT - A Command to Quickly View .DOC & .BUD Files on the Screen :

        BT.COM -- An replacement Screen Displayer for TYPE (& ST - Super Typer)
BT presents 25 line paged screen file displays under user control.

To use type either :
        BT filename.ext   or BT filename.ext /W if it is a WORDSTAR file.
        The filename may contain drive and path specifications.

Controlling key stroke commands:
        Page Up   - PGUP   One Line Up   - UP Arrow   Top of File - HOME
        Page Down - PGDN   One Line Down - DOWN Arrow   End of file - END

Horizonal Movement for lines over 80 characters
        Scroll Right 8 Characters   Right Arrow once for each 8 characters,
        Scroll back to the left 8 Characters - type the Left Arrow once

Escape back to DOS and the Screen as it was when you activated BT by Typing :
        ESC (or Ctrl Break ?)

Error Messages - (1) File Not Found,
                 (2) Unsupported Graphics Mode if DOS is in a graphics mode.

Notes; Requires 33k , 2.0 + to run. Small left arrows represent EOF marks.
        BT is EGA aware & works with color adapters, but some snow will appear.
        Under WINDOWS or TOPVIEW (interrupt @ 23h) - Writes directly to Screen.

Source: BROWSE.COM in PC Magazine 3/25/1986

                (End of BT.DOC File)

CONFIG.SYS - Required System Attributes Upon Booting (For Floppy Drives):

FILES - 15   (at least 15 are required)
BUFFERS - 10

                            (End of CONFIG.SYS File)

        AUTOEXEC.BAT - For starting up a 2 floppy drive system :

ECHO OFF
BURNOUT /k/5   (blanks screen after 5 minutes of keyboard idleness)
DATE   (be sure to set date & time to
TIME   (record latest .DAT file revision event)
ECHO   Be sure to bring up the system for BUD with a config.sys of 15 files.
GOBUDAB
                            (End of AUTOEXEC.BAT File)

GOBUDAB.EXE - Compiled From BASIC Only Used on Floppy Drive Systems :

```
1000 '  a MNMMSBG utility to boot the system , set B: as the default drive
1010 '  and the bring up MNMMSBG on the B: drive , leaving A: for budgets.
1020 CLS
1030 CALL SETDRIVE("B") ' a machine language utility to change drives
1040 LOCATE 6, 6
1050 PRINT SPC( 6); "B:\ is now specified as the default drive."
1060 PRINT
1070 PRINT SPC(20); "Place the BUD (MNMMSBG) disk in it."
1080 PRINT
1090 PRINT SPC(10); "Place the desired BUDGET.DAT (data) disk in the A:\
drive."
1100 PRINT
1110 PRINT SPC( 5); "If you need to, you can restart MNMMSBG by typing BUD
at the B:\ prompt."
1120 PRINT
1130 PRINT SPC(10); "Press <RETURN> when the drives have the correct disks
in them.";
1140 Z$ = INPUT$(1)   : if z$ = chr$(27) THEN END
1150 on error goto 1180
1160 CHAIN "MNMMSBG"
1170 '  -------------------
1180 LOCATE 20,11 :  beep:beep
1190 print "The file MNMMSBG.EXE was not on the disk in drive B:\  ."
1200 print spc(10);"Change the disk or press <ESC> to escape to the system."
1210 goto 1040
1220 '  ------------------- ( End of GOBUDAB.BAS ) ------
```

BUD.BAT - A Batch File on the Default Drive to Start MNMMSBG and to Remind the User to Undo Any Special ASSIGNments :

```
MNMMSBG
ECHO OFF
ECHO              *** Reminders *** Upon Exiting ***
ECHO    The Minnesota Modified Mississippi State Budget Generator ,
ECHO .
ECHO    If drive A was re-ASSIGNed type the command  ASSIGN,
ECHO    If it was ASSIGNed to a memory disk, be sure to COPY files to media.
ECHO .
ECHO    Also , do you want to check data disks for free space or do backups?

                    ( End of BUD.BAT file )
```

<u>Post and Pre MNMMSBG Data Processing Programs That Prepare Data or Retrieve it for Display in Selected Forms.</u>

The listings shown below display the MENUFILE.TXT files that set up the choices available to a user in the state office and in the Extension offices.

"1989 Crop Budget Processing Aids for Office Use"
"FSLAYOUT","Processes FACTFILE.FSF files into Fact Sheet form."
"MACFILER","Processes MACH89 files to Machinery Cost Folder &/or MNMMSBG form."
"MACUSTOM","Processes MACH89 files to The FARMER Custom Rate form."
"MAKEHEAD","Makes a header file (BSA*.HDR) for each soil area budget set."
"LISTBUDG","Lists selected budgets, headers and factsheets
"COPYBUDG","Copies selected budgets from selected files to a combined file."
"GOVTVALU","Calculates the govt. program value for inclusion in 1989 budgets."

"END OF FILES","END OF FILES"