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**Quick Tutorial**

# **ESM Lab**

Ecostatometrics Modeling and Analysis Software

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## Suggestions and Upgrades

We value your suggestions and remarks. For suggestions, upgrade options and other general inquiries and comments; please feel free to contact us on +2348062522870 or by email on [microcraft@yahoo.com](mailto:microcraft@yahoo.com).

## Introducing ESM

The ESM software can be used to analyze systems of equation models such as:

- Simple equation differential modeling
- Panel data models
- Dummy variable models, etc.

## Installing ESM

ESM is simple to install and configure. A basic installation can be done within minutes by running the setup file and using default options.

To install ESM:

1. Open the installation disk/folder
2. Double-click the **ESMLabSetup.exe** file
3. Following the instructions
4. Click Finish to complete the installation.

After installing ESM, on Windows Vista or Windows 7, you may have to run it as an administrator, by right-clicking the icon and selecting *Run as Administrator*; or configure ESM to automatically run as administrator by right-clicking the icon and selecting *properties*, and checking *run this program as administrator* from the *compatibility* tab, to automatically run in administrator mode. For more information on this issue see your windows help.

## Preparing Data for ESM

ESM is a data analysis / modeling tool. Therefore data must first be prepared according to certain specification before using ESM. Once one is clear on the model and has been able to specify variables, the next step is to classify the variables into endogenous and exogenous variables.

Figure 1: Below is a sample data showing data on devaluation effects on selected national variables. Such data can be prepared using Excel and stored as an Excel file or CSV file as input to ESM for modeling or analysis.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	YEAR	CONPT	INVTM.	POVTY	EXPT.	IMPT	GDP	ExtRes	InflaRt	UNEPM.	ExtrnDt	IntRt	Devaltn	Exch*Deval
2	1980	50848.6	3620.1	53.1	14186.7	9095.6	49632.3	5445.6	9.9	7.4	1866.8	6	0	0.5464
3	1981	50749.1	3757.9	53.1	11023.3	12839.6	50456.1	2424.8	10.9	7.2	2331.2	6	1	0.61
4	1982	51792.3	5382.8	53.1	8206.4	10770.5	51653.4	1026.5	7.7	4.7	8819.4	8	1	0.6722
5	1983	56745.2	5949.5	47	7502.5	8903.7	56312.9	781.7	28.8	10.2	10577.7	8	1	0.7241
6	1984	63076.3	6418.3	45.6	9088	7178.3	62474.2	1143.8	38.6	8.9	14808.7	10	1	0.7649
7	1985	71620.5	6804	45	11720.8	7062.6	70633.2	1641.1	5.5	6.5	17300.6	10	1	0.8938
8	1986	72792.7	9313.6	45.8	8920.6	5983.6	71859	3587.4	5.4	5.5	41452.4	10	1	2.0206
9	1987	110184.6	9993.6	45.8	30360.6	17861.7	108183	4643.3	10.2	7	100789.1	12.75	1	4.0179
10	1988	145183.1	11339.2	45.8	31192.8	21445.2	142614	3272.7	30.9	5.3	133956.3	12.75	1	4.5367
11	1989	222539.1	10899.6	45.8	57971.2	30860.2	220200	13457.1	40.9	4	240393.7	18.5	1	7.3916
12	1990	274672.1	10436.1	42.5	109886.1	45717.9	271908	34953.1	7.5	5.5	298614.4	18.5	1	8.0378
13	1991	320432.9	12243.5	44.3	121535.4	89488.2	316670	44249.6	45	5.7	328453.8	14.5	1	9.9095
14	1992	541783.2	20512.7	45	205611.7	143151.2	536305.1	13992.5	44.5	7.5	544264.1	17.5	1	17.2984
15	1993	693623.4	66787	42.1	218770.1	165629.4	688136.6	67245.6	57.2	7.2	633144.4	26	1	22.0511
16	1994	907875.4	70714.6	45	206059.2	162788.8	904004.7	30455.9	74.5	6.8	648813	13.5	0	0
17	1995	1951885	119391.6	41	950661.4	755127.7	1934831	40333.2	85	6.2	716865.6	13.5	0	0
18	1996	2787284	122600.9	44.4	1309543	562626.6	2703809	174309.9	72.4	6.4	617320	13.5	0	0
19	1997	2906625	128331.8	44.4	1241663	845716.6	2801973	262198.5	29.8	8.5	595931.9	13.5	0	0
20	1998	2836814	152409.6	44.4	751856.7	837418.7	2721178	226702.4	10.2	7.6	633017	14.31	0	0
21	1999	3440204	154188.6	38.2	1188970	862515.7	3313563	546873.1	8.5	8.5	2577374	18	1	92.6934
22	2000	4866280	157535.4	37.6	1945723	985022.4	4727523	1090148	27.2	11.5	3130251	13.5	1	102.11
23	2001	5526205	162343.4	37.6	2001231	1371409	5374335	1181652	8.9	5.5	3176291	14.31	1	111.94
24	2002	6398908	166631.6	37.6	1882668	1457091	6232244	1013514	18.8	5.6	3932665	15.75	1	120.9702
25	2003	6255470	178478	37.6	2924135	1507423	6061700	1065093	14	3.8	4479329	16	1	129.36
26	2004	6665040	249220.6	37.4	3143801	1638354	6455110	2252644	13.8	3.3	4890270	15	1	133.5

## Using the ESM

Step 1: Open ESM-LAB from the Windows Start menu or Desktop

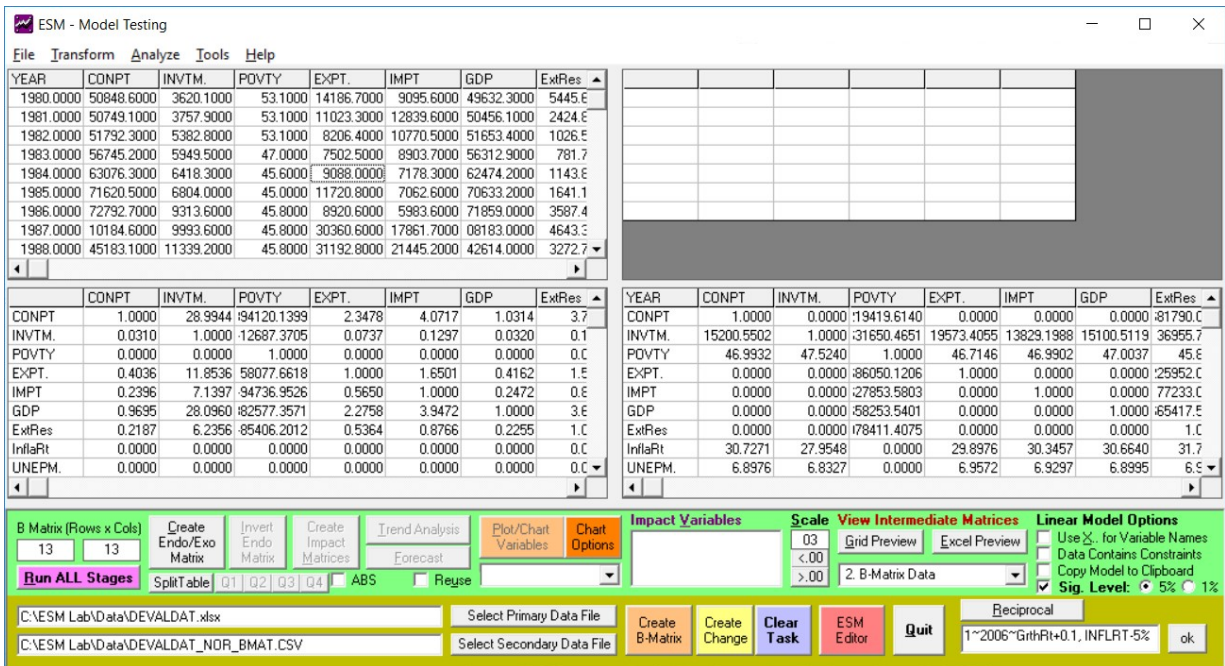


Figure 2: Showing ESM with its for views, with primary data on view 1, and B/A matrix on views 3 and 4.

Step 2: Click **[Clear Task]** button to clear the screen to begin a new project

Step 3: Click **[Select Primary Data File]** button to find and load a primary data file (in Excel or CSV format).

Step 4: Click **[Create B-Matrix]** button to create the B matrix. The A matrix is automatically created too. (Figure 2)

Step 5: Click **[Create Endo/Exo Matrix]** button to specify the size/number of the endogenous variables, and separate it from the exogenous variables.

Step 6: Click **[Invert Endo Matrix]** to create an inverse of endogenous data.

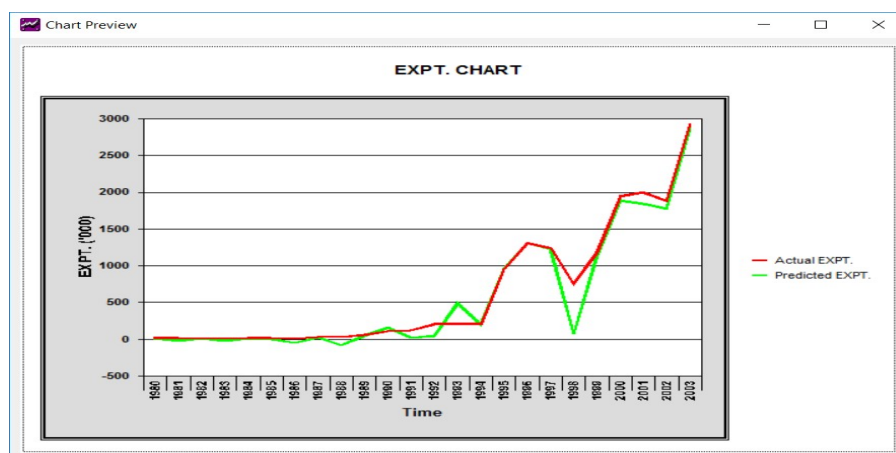
Step 7: Click **[Create Impact Matrices]** button to create impact matrices.

Step 8: Click **[Trend Analysis]** button to analyze the data and create chart data.

Step 9: Use chart options to edit the chart title and other options, and click **[Plot/Chart]** button to re-plot chart.

- To copy a chart image into word, use snipping tool to capture the screen or press Alt-PrintScreen button.

- To copy only the chart data to Word or Excel simply press Ctrl-V immediately after generating the chart.



## Using other options on the ESM menu

Use the [**<.00**] [**>.00**] buttons to adjust the number decimal places

To know the data being displayed in any of the four ESM views, simple point/rest the mouse pointer on the view.

To export the data in an ESM view to Excel, click on the View and press Enter key.

Use the [Impact Variables] list to select one or more impact of a particular variable or group of variables on an endogenous variable.

The list of **Intermediate Matrices** contains a list various matrices created during the analysis of a particular project. To view any of the matrices, select the matrix title from the list and click [Grid Preview] to display it the forth View of ESM or click [Excel Preview] to display the matrix Excel.

There are also working tools on the menu of ESM for performing various operations:

- Regression
- Matrix operations
- Transformations, etc.

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