

The Gwx Story

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Riga Latvia

The GwX Story

The Biography of a Regression and Model-building Program
Built in C++ with Free, Open-Source,
Cross-Platform Tools



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A Partial and Preliminary Version as of
May 2017

Why Gwx?

- *Future*: Borland Builder 6 is old, new versions are expensive.
- *Freedom*: Gwx uses GNU GCC compiler, Codeblocks IDE, and wxWidgets framework of GUI design tools
- *Portability*: We are building under Ubuntu Linux, but it will work under Mac and Windows as well.

Building Blocks

- *GNU Tools*: Open source, industry-standard GCC and GDB debugger, can be installed under Cygwin or MinGW.
- *CodeBlocks*: Open source graphical IDE with add-ons for wxSmith and other tools
- *wxWidgets*: Full set of GUI elements, with wxSmith this is much like the Borland Builder IDE.

Ubuntu Linux

- *One of the most popular and unique Linux distributions.*
- *Can easily be installed to dual-boot with Windows 7 or 10. Can also be run as a virtual machine, in VirtualBox.*
- *<http://releases.ubuntu.com/16.04/>*
- *<https://www.virtualbox.org/wiki/Downloads>*

CodeBlocks



- *Current version is 16.01. We have been using it since version 10*
- <http://www.codeblocks.org/downloads/26>
- Under Ubuntu:
 - `sudo apt-get install codeblocks`
- Under Windows:
 - `codeblocks-16.01mingw-setup.exe`

wxWidgets



- *Current most stable version is 2.8.*
 - <http://www.wxwidgets.org/downloads/>
- Under Ubuntu:
 - Install several wxWidgets headers and libraries.
- Under Windows:
 - wxWidgets library needs to be compiled, but this situation should improve soon.

Tutorials

- Clopper has taken over the development and maintenance of the wxSmith tutorial.
 - http://wiki.codeblocks.org/index.php/WxSmith_tutorials/
- There are currently 10 tutorials, that take the new programmer step by step through understanding and developing with CodeBlocks and wxWidgets.
- *The Gwx Story* is also set up as a series of tutorials, and is described as 'A Biography of a Program'.
- Much of the material there is also helpful for understanding the underlying structure of *G7*.

Screen Shot of Codeblocks and Gwx

The screenshot shows the Code::Blocks IDE interface. The main window displays the source code for `*GwxMain.cpp`. The code defines a `short addcmd()` function that handles file operations, including opening files and substituting arguments. The GUI structure is visible in the left-hand 'Management' pane, showing a hierarchy of wxWidgets controls like `wxFrame`, `wxPanel`, and `wxTextCtrl`.

```
553     ... }
554     ... }
555     return OK;
556     ... }
557     // Execute the commands in a specified file
558     short addcmd(){
559     char filename[FILENAME_MAX], chopreturn;
560     short i;
561     char s[MAXLINE];
562     FILE *iinsave;
563
564     // Find the name of the file with the commands.
565     chop(filename);
566     iinsave = iin;
567     iin = fopen(filename, "r");
568     if(iin == 0){
569     printf("The file %s does not exist.\n", filename);
570     iin = iinsave;
571     return ERR;
572     }
573     // Look for text substitution arguments; load them into substitutes.
574     i = 0;
575     while(i < 10){
576     chopreturn = chop(s);
577     if(chopreturn == 'a' || chopreturn == 'n' || chopreturn == ''){
578     strcpy(substitutes[i], s);
579     i++;
580     }
581     else if(chopreturn == 'e') break;
582     }
583     // Read and execute the commands in the add file
584     // i = 0;
585     while (i < MAXLINE)
```

Property	Value
Text	
Max Length	0
Var name	Results
Is member	<input checked="" type="checkbox"/>
Identifier	ID_TEXTCTRL1
Class name	wxTextCtrl
Default pos	<input checked="" type="checkbox"/>
X	-1
Y	-1
Pos in dialog units	<input type="checkbox"/>
Default size	<input type="checkbox"/>
Width	300
Height	200
Size in dialog units	<input type="checkbox"/>
Validator	
Enabled	<input checked="" type="checkbox"/>
Focused	<input type="checkbox"/>
Hidden	<input type="checkbox"/>

Build Log:
----- Build: Debug in Gwx (compiler: GNU GCC Compiler)-----
Target is up to date.
Nothing to be done (all items are up-to-date).

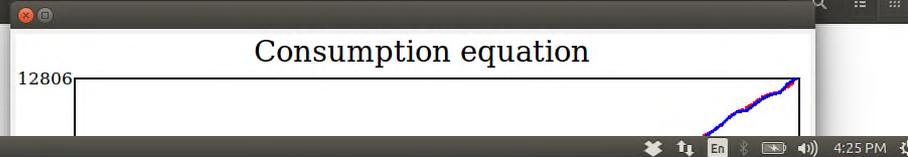
GWXtest

Pick Dir Giotto

1998q1	8889.700	8994.700	9146.500	9325.700
--------	----------	----------	----------	----------

douglas@maynard: ~

Processing triggers for man-db (2.7.5-1)



Pick Dir Giotto

```

tdateA input 1995q1
tdateB input 2016q3
Year 1995 Frequency 4 Period 1 Day 0.
Year 2016 Frequency 4 Period 3 Day 0.
gdates 1995q1 2016q3
gdateA input 1995q1
gdateB input 2016q3
Year 1995 Frequency 4 Period 1 Day 0.
Year 2016 Frequency 4 Period 3 Day 0.
Year 2016 Frequency 4 Period 3 Day 0.
Unrecognized command product.
rdates 1995q1 2016q3
rdateA input 1995q1
rdateB input 2016q3
Year 1995 Frequency 4 Period 1 Day 0.
Year 2016 Frequency 4 Period 3 Day 0.
Year 2016 Frequency 4 Period 3 Day 0.
Unrecognized command product.

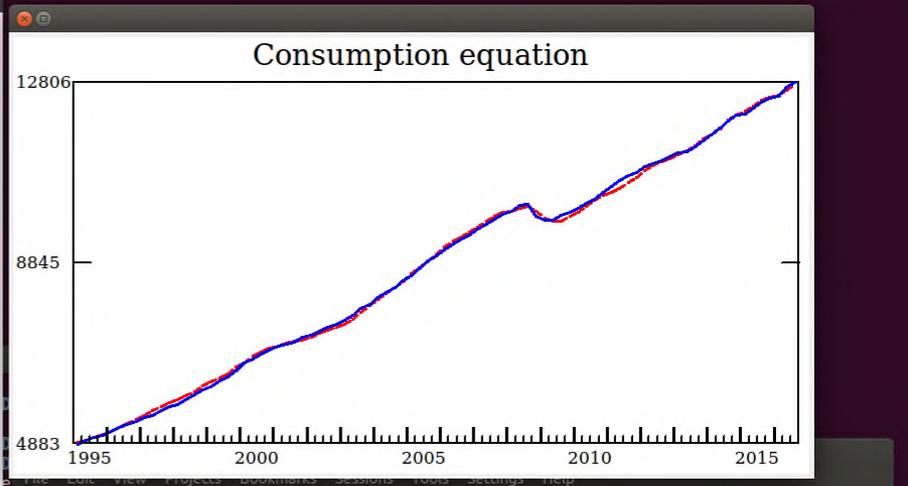
ty gdp
Here is gdp:
1995q1 7545.300 7604.900 7706.500 7799.500
1996q1 7893.100 8061.500 8159.000 8287.101
1997q1 8402.101 8551.900 8691.800 8788.300
1998q1 8889.700 8994.700 9146.500 9325.700
1999q1 9447.101 9557.000 9712.300 9926.101
2000q1 10031.000 10278.300 10357.400 10472.300
2001q1 10508.101 10638.400 10639.500 10701.300
2002q1 10834.400 10934.800 11037.101 11103.800
2003q1 11230.101 11370.700 11625.101 11816.800
2004q1 11988.400 12181.400 12367.700 12562.200
2005q1 12813.700 12974.101 13205.400 13381.601
2006q1 13648.900 13799.800 13908.500 14066.400
2007q1 14233.200 14422.300 14569.700 14685.300
2008q1 14668.400 14813.000 14843.000 14549.900
2009q1 14383.900 14340.400 14384.101 14566.500
2010q1 14681.101 14888.601 15057.700 15230.200
2011q1 15238.400 15460.900 15587.101 15785.300
2012q1 15973.900 16121.900 16227.900 16297.300
2013q1 16475.400 16541.400 16749.301 16999.900
2014q1 17025.201 17285.600 17569.400 17692.201
2015q1 17783.600 17998.301 18141.900 18222.801
2016q1 18281.600 18450.100 18651.201

gr gdp
GwxGraph.png

# After closing the previous graph window, the add file stops.

title Consumption equation
r c = gdp, gdp[1]
:
Consumption equation
SEE = 78.2 R5Q = 0.999 RHO = 0.820 DW = 0.361
Variable name RegCoef Mexval Elas NorRes Means
1 intercept -422.26454 68.0 -0.05 985.19 1.00
2 gdp 0.45099 11.9 0.67 1.08 12963.74
3 gdp[1] 0.25795 4.0 0.38 1.00 12835.30
gr *

```



testgwx.add c.reg

```

1 # c.reg - regression equation example
2
3 tdates 1995q1 2016q3
4 gdates 1995q1 2016q3
5 rdates 1995q1 2016q3
6
7 title Consumption equation
8 r c = gdp, gdp[1]
9 gr *
10

```

Line 7, Column 1

INSERT Tab Size: 3 UTF-8 WINE Config

Search and Replace

History and Future Development

HISTORY

- *Florence* – Initial development and proof of concept.
- *Baikal* – up to 12 tutorials, including “f”, “r” commands, and graphs.
- *Osnabruck* – Many new functions, vam file commands.
- *Latvia* – More vam commands, including “show” command with grid.

COMING UP NEXT!

- Finish Vam capabilities
- Cross-Platform Interdyme (Fixer, Macfixer, IdBuild, Banker and Dyme model.) in Console model within Codeblocks.
- Windows version of Gwx.

Want to Learn More?

Install Codeblocks/wxWidgets on your Linux and/or Windows computer.

We will make the current stable version available to compile and use.

We will continue to experiment with GCC under Linux, and with Cygwin and Mingw under Windows, and make programs available.

The latest version of *The Gwx Story* (2017) is available in PDF.