Title of MRP Here

by

My Name

B.A., University of XXX, 20XX
M.A., University of XXX, 20XX

A MAJOR RESEARCH PAPER SUBMITTED IN PARTIAL FULFILMENT OF

THE REQUIREMENTS FOR THE DEGREE OF

MASTER of BUSINESS ECONOMICS

in

THE FACULTY OF GRADUATE STUDIES

Department of Economics

Supervisor(s): Supervisor(s) name(s) here

Brock University

Month, Year

©Your Name, Current Year

In presenting this major research paper in partial fulfilment of the requirements for an advanced degree at Brock University, I agree that the Department of Economics shall have a right to make it freely available for reference and study. I further agree that permission for extensive copying of this research for scholarly purposes may be granted by the Graduate Program Director of the Master of Business Economics program or by his or her representatives. It is understood that copying or publication of the thesis for financial gain shall not be allowed without my written permission.

Department of Economics
Brock University
500 Glenridge Ave.
St. Catharines, Ontario
L2S 3A1 CANADA

Signature: _____ Date: _____

Abstract

This paper is an examination into...

Acknowledgement

I would like to thank my cousin Vinny for helping me out...

Contents

Abstract **ii**

Acknowledgement **iii**

Contents **iv**

List of Figures **v**

1 Name of Section 1 **1**
1.1 Name of Subsection 1.1 1

2 Name of Section 2 **1**
2.1 Name of Subsection 2.1 1
2.1.1 Name of subsubsection 2.1.1 1

3 Sample Material **1**

A Appendix **3**

B Sample Computer Code **5**

Bibliography **6**

List of Figures

1 A semi-pooling equilibrium with non-monotone decreasing $c(q)$. 2
2 This is the Brock Logo 2

1 Name of Section 1

1.1 Name of Subsection 1.1

2 Name of Section 2

2.1 Name of Subsection 2.1

2.1.1 Name of subsubsection 2.1.1

3 Sample Material

To start a new paragraph just leave a blank line.

This is a new paragraph.

This is another.

To type math inline (as part of a sentence use dollar signs). For example, f is a function that maps from the set X to Y can be written as $f : X \to Y$. If the set Y is a subset of the real line, we can write $Y \subset \mathbb{R}$ or simply redefine the map $f : X \to \mathbb{R}$.

To display a function, such as $f(x) = x^2$ not inline, you can simply use:

$$f(x) = x^2$$

or

$$f(x) = x^2$$

To number the equation automatically, use:

$$f(x) = x^2 \tag{1}$$

where the "label" function is the label (in this case EQ1) that you assign to that equation.[1] If you need to refer to that equation again somewhere in the text, you simply need to type something along the lines of see Eq. (1). So if you have multiple equations, like:

$$f(x) = \sqrt{x} \tag{2}$$

and:

$$f(x) = \int_{-\infty}^{x} y dy \tag{3}$$

you can call up Eq. (3) or Eq. (2) at anytime. Section numbers can be labeled and referenced accordingly. So, this calls up Section 3.

The predefined environments are in the preamble and include, for example, propositions, lemmas, theorems, etc... To begin a proposition, use:

[1] Notice that the open quotation is typed using two " not " (that is 2 of ' (the key beside the number 1)) and the end quotation is typed using " (that is 2 of ') not ".

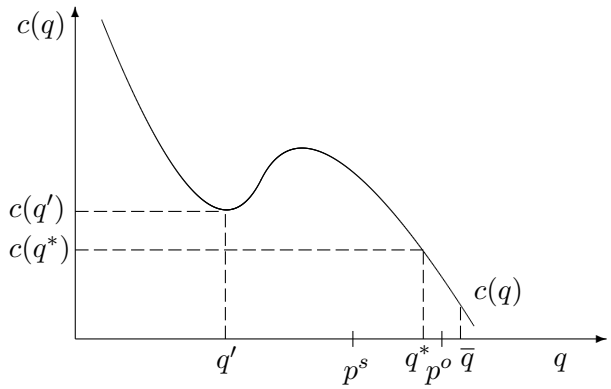

Figure 1: A semi-pooling equilibrium with non-monotone decreasing $c(q)$.

Figure 2: This is the Brock Logo

Proposition 1 *This is the first proposition.*

Proof: Is there really a need? ■

To literally draw figures, here is an example:

To include scaled graphics and label it as a figure:[2]

The auto-pst-pdf package in the preamble makes it possible to compile both encapsulated postscript (EPS) figures as well as JPEGS (jpg) on the fly. If you are not using the auto-pst-pdf package, you will need to compile using tex-dvi-ps-pdf or simply tex-ps-pdf.

[2]The graphics file should be in the same folder as your tex file.

A Appendix

Theorem 1 *Let $f : [a, b] \to \mathbb{R}$ be $\mathcal{C}^0$ and differentiable over (a, b). Then there exists some $c \in (a, b)$ so that:*

$$(b - a)f'(c) = f(b) - f(a)$$

Proof: You should be able to prove the Mean Value Theorem in $\mathbb{R}$. ■

Below is a sample table.

Table 1: Estimation Results - Nonlinear Models

	M_{33}	M_{33r}	M_{32}	M_{31}	M_{43}	M_{53}	M_{52}	M_{63}
α_0	-0.12	-0.12	-0.12	-0.21	-1.14	3.68	3.68	3.86
	(1.86)	(1.86)	(1.86)	(0.17)	(2.16)	(1.60)	(1.60)	(1.74)
α_1	0.39	0.39	0.39	0.89	0.30	0.49	0.48	0.23
	(0.07)	(0.07)	(0.07)	(0.05)	(0.06)	(0.14)	(0.14)	(0.11)
α_{12}					0.14	-0.27	-0.27	
					(0.07)	(0.06)	(0.06)	
α_2	1.36	1.36	1.36	0.33	1.52	0.73	0.73	0.66
	(0.47)	(0.49)	(0.47)	(0.11)	(0.51)	(0.55)	(0.55)	(0.58)
α_3	0.49	0.49	0.49	0.47	0.62			
	(0.10)	(0.10)	(0.10)	(0.11)	(0.14)			
α_4	0.07	0.07	0.07	0.12	0.11	-0.07	-0.07	-0.05
	(0.04)	(0.04)	(0.04)	(0.03)	(0.05)	(0.03)	(0.03)	(0.04)
β_0	-1.96				-1.21	-0.78		-1.51
	(0.98)				(1.05)	(1.20)		(1.20)
β_1	1.02				1.52	1.56		1.02
	(0.09)				(0.11)	(0.14)		(0.12)
β_{12}					-0.54	-0.58		
					(0.06)	(0.08)		
β_2	0.52				0.39	0.25		(0.36)
	(0.42)				(0.41)	(0.46)		(0.52)
β_3	0.40				0.26			
	(0.23)				(0.15)			
β_4	0.05				-0.02	-0.04		0.02
	(0.05)				(0.03)	(0.02)		(0.03)
γ_0	-0.40	-0.35	-0.32		-0.11	-0.13	-0.13	-0.51
	(0.19)	(0.19)	(0.19)		(0.11)	(0.11)	(0.14)	(0.30)
γ_1	0.80	0.80	0.97		1.31	1.36	1.57	0.77
	(0.05)	(0.06)	(0.05)		(0.07)	(0.09)	(0.08)	(0.06)
γ_{12}					-0.46	-0.54	-0.60	
					(0.06)	(0.09)	(0.08)	
γ_2	0.64	0.61	0.19		0.41	0.46	0.13	0.75
	(0.17)	(0.17)	(0.15)		(0.13)	(0.12)	(0.11)	(0.20)
γ_3	0.33	0.35	0.33		0.29			
	(0.10)	(0.10)	(0.14)		(0.06)			
γ_4	0.22	0.23	0.09		0.16	0.11	-0.01	0.18
	(0.04)	(0.04)	(0.03)		(0.04)	(0.04)	(0.02)	(0.04)
Threshold			3.9%				3.9%	
Lower	2.8%	2.8%			2.9%	2.9%		2.8%
Upper	3.9%	3.9%			3.9%	3.9%		3.9%
AIC	231.66	232.56	245.35	273.41	197.28	225.40	231.04	260.34
BIC	268.47	257.10	269.89	285.68	241.46	262.21	255.58	289.80
Bias	0.015	-0.006	-0.012	-0.043	0.012	0.015	-0.002	-0.007
MSPE	0.033	0.029	0.031	0.061	0.020	0.016	0.014	0.024

Notes: The first index, i in M_{ij} refers to the type of linear model while the second index, j, refers to the number of regimes. The index r is the restricted model obtained by imposing a random walk in the middle regime. The αs are for the upper regime, βs for the middle regime and the γs for the lower regime, etc...

B Sample Computer Code

```
global t xgmm zgmm f1r f2r options options1 options2 ii Weight Weight1 Weight2

disp('')
disp('')
disp('           *******************************************************')
disp('           *******************************************************')
disp('           *                                                     *')
disp('           *   Tests of structural change with                   *')
disp('           *           with weak identification                  *')
disp('           *                                                     *')
disp('           *                                                     *')
disp('           *******************************************************')
disp('           *******************************************************')
disp('')
disp('')
disp('Ran on')
str=date;
str

diary ('temp.out')
diary off

options = optimset('LargeScale','on','GradObj','on','MaxFunEvals',400,'MaxIter',100,'Display','off','TolFun',1e-006);

options1=optimset('LargeScale','on', 'GradObj','on', 'DerivativeCheck','on');
%options1 used to check derivatives

options2= optimset('GradObj','on','LargeScale','off', 'HessUpdate','bfgs','Display', 'off');
% Used for Lambda vector with Newton's method

%warning off all

mrep=1; % number of replications
t=50;  % number of observations
nd=100;  % discarded observations
nys=t+nd;
bp=0.5; % location of breakpoint: 0.25, 0.5 and 0.75

nobs1=round(.15*t);
nobs2=round(.85*t);
ntest=nobs2-nobs1+1;

beta=0;    % parameter value under null, 1 under alternative
phiz=0.9;  % AR parameter for instruments z: 0,.5,.9
phiu=0.9;  % AR parameter for error term u: 0,.5,.9

vcov=[1 .5; .5 1]; % correlation matrix between epsu and epsx
vc=chol(vcov);

nz=2; %number of instruments: 2, 5, 9
%Standard
PI=[ones(1,nz)]; % Sets the strength or weakness of identification: 1 for standard
% Weak
%PI=[zeros(1,nz)]; % Sets the strength or weakness of identification: 1 for standard
%PI(1,1)=0.1;
```

References

[1] Baye, M., J. Morgan, and P. Scholten, "Price Dispersion in the Small and in the Large: Evidence from an Internet Price Comparison Site," *Mimeo*, Indiana University, 2002.

[2] Butters, G. R., "Equilibrium Distributions of Sales and Advertising Prices," *Review of Economic Studies*, 1977, 44, 465-91.

[3] Cabral, L. M.B. *Introduction to Industrial Organization*. Cambridge: MIT Press, 2000.