Strategic Outlook

NOVA SCOTIA'S FIVE ECONOMIC REGIONS

MACRO OUTLOOK 2018 – 2022

June 2018

Prepared by Canmac Economics Limited

Strategic Outlook Advisory Council

Dr. Len MacLean, Dalhousie University

Dr. Jim McNiven, Dalhousie University

Mr. John Mersereau

Ms. Betty MacDonald, Executive Director, Nova Scotia Federation of Municipalities

Mr. Bill Steele, Chief Economist, Nova Scotia Finance

Mr. Fred Morley, Chief Economist, Nova Scotia Tourism

Mr. Wendell MacGillivary

Contents

Introduction

This report provides a macro outlook for each of Nova Scotia's five economic regions (Map 1) over the period 2018 to 2022. The forecast is based on Canmac's proprietory macro econometric model (Appendix A) of Nova Scotia's regions. The macro outlook provides forecasts of 1) gross domestic product, 2) labour force, 3) employment and 4) personal disposable income.

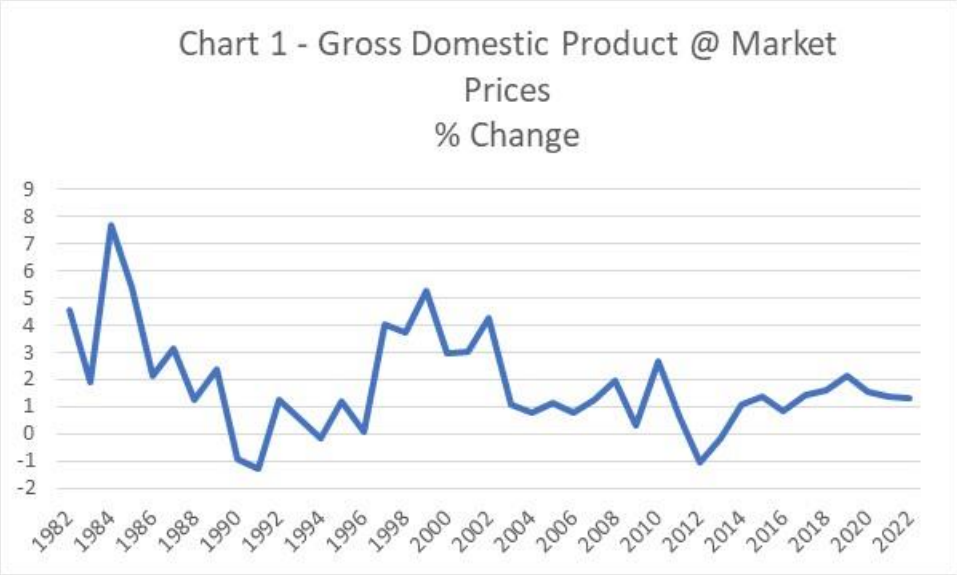
Map 1

Section 1 – External Drivers

The five region macro outlook takes as given the Canmac macro outlook for the Nova Scotia economy. The Nova Scotia macro outlook is then used to predict region macro outlooks.

Nova Scotia Macro Outlook

Over the next five years we expect the Nova Scotia economy to grow an average of 1.6% which is near the historic 1981 – 2016 average of 1.8%. Labour force growth which is driven largely by population growth will continue to show modest growth of 0.27%. The slow growth in GDP will result in a slow growth in employment demand. However, the slower growth in the labour force will see unemployment rates decrease to 3.8% by 2022. Inflation rates will average 2.2% over the forecast period, kept under control by a contractionary monetary policy.



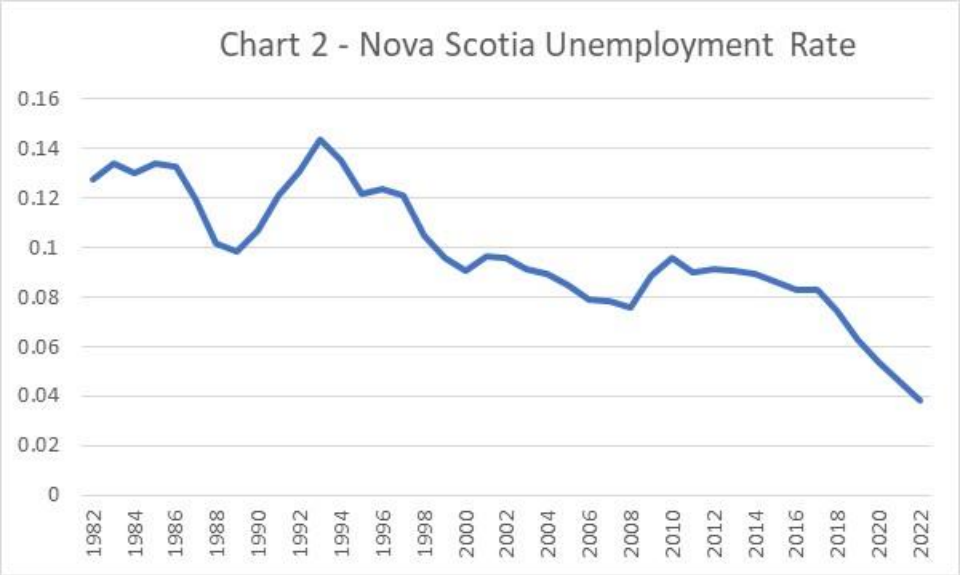


Chart 2 - Nova Scotia Unemployment Rate
0.16
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
1982
1984
1986
1988
1990
1992
1994
1996
1998
2000
2002
2004
2006
2008
2010
2012
2014
2016
2018
2020
2022

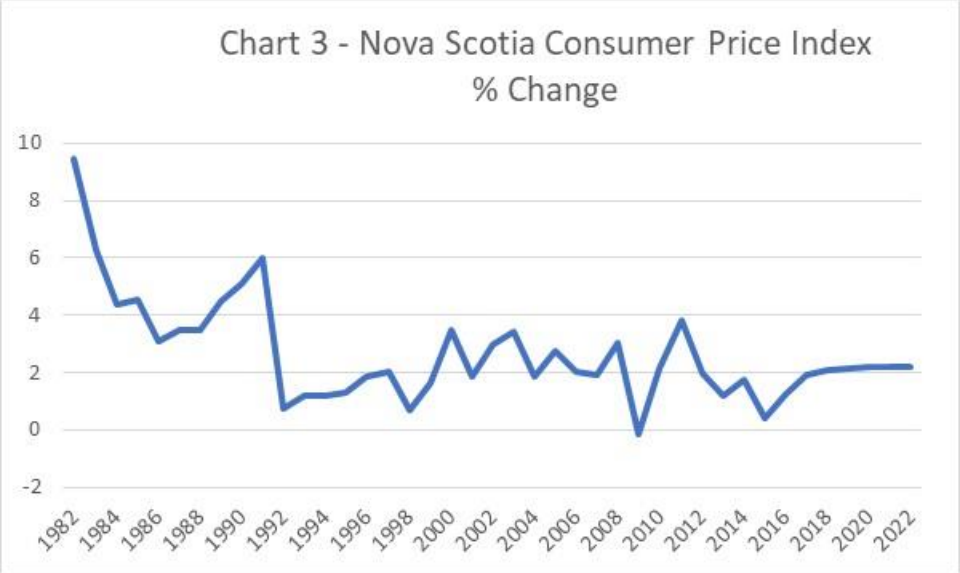


Chart 3 - Nova Scotia Consumer Price Index
% Change
10
8
6
4
2
0
-2
1982
1984
1986
1988
1990
1992
1994
1996
1998
2000
2002
2004
2006
2008
2010
2012
2014
2016
2018
2020
2022

Table 1 – Canmac Nova Scotia Forecast 2018 - 2022							
	2016	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**
Gross Domestic Product at Market Price	36,654	37,183	37,790	38,598	39,202	39,751	40,268
Total Labour Force	486.6	490.8	492.5	494.3	495.5	496.7	497.6
Total Employment	446.3	450.2	455.7	463.3	468.8	473.9	478.7
Unemployment rate	0.083	0.083	0.075	0.063	0.054	0.046	0.038
Household Final Consumption Expenditure	26,156	26,511	26,917	27,364	27,826	28,295	28,766
Total Exports	13,051	13,337	13,618	13,885	14,150	14,415	14,682
General Governments Final Consumption Expenditure	11,510	11,797	12,021	12,222	12,383	12,512	12,613
Gross Fixed Capital Formation	7,648	8,795	9,212	9,819	10,128	10,331	10,487
Household Disposable Income	27,054	27,802	28,703	29,783	30,777	31,779	32,797
Consumer Price Index	130.9	133.4	136.2	139.1	142.1	145.2	148.5
Source: Canmac Econometric Model Base Case NSMACRO Update 2018							

Table 2 – Canmac Nova Scotia Forecast 2018 – 2022 % Change							
	2016	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**
Gross Domestic Product at Market Price	0.82	1.44	1.63	2.14	1.57	1.40	1.30
Total Labour Force	-0.73	0.86	0.34	0.36	0.25	0.24	0.18
Total Employment	-0.40	0.88	1.21	1.66	1.19	1.08	1.01
Unemployment rate	-3.6	-0.2	-9.7	-16.0	-14.0	-14.7	-17.3
Household Final Consumption Expenditure	1.34	1.36	1.53	1.66	1.69	1.68	1.66
Total Exports	-0.78	2.19	2.11	1.96	1.91	1.87	1.85
General Governments Final Consumption Expenditure	1.22	2.49	1.90	1.67	1.32	1.04	0.81
Gross Fixed Capital Formation	8.5	15.0	4.7	6.6	3.1	2.0	1.5
Household Disposable Income	3.08	2.76	3.24	3.76	3.34	3.26	3.20
Consumer Price Index	1.24	1.93	2.06	2.14	2.18	2.20	2.22
Source: Canmac Econometric Model Base Case NSMACRO Update 2018							

Section 2 – Macro Outlook – Nova Scotia's Five Regions

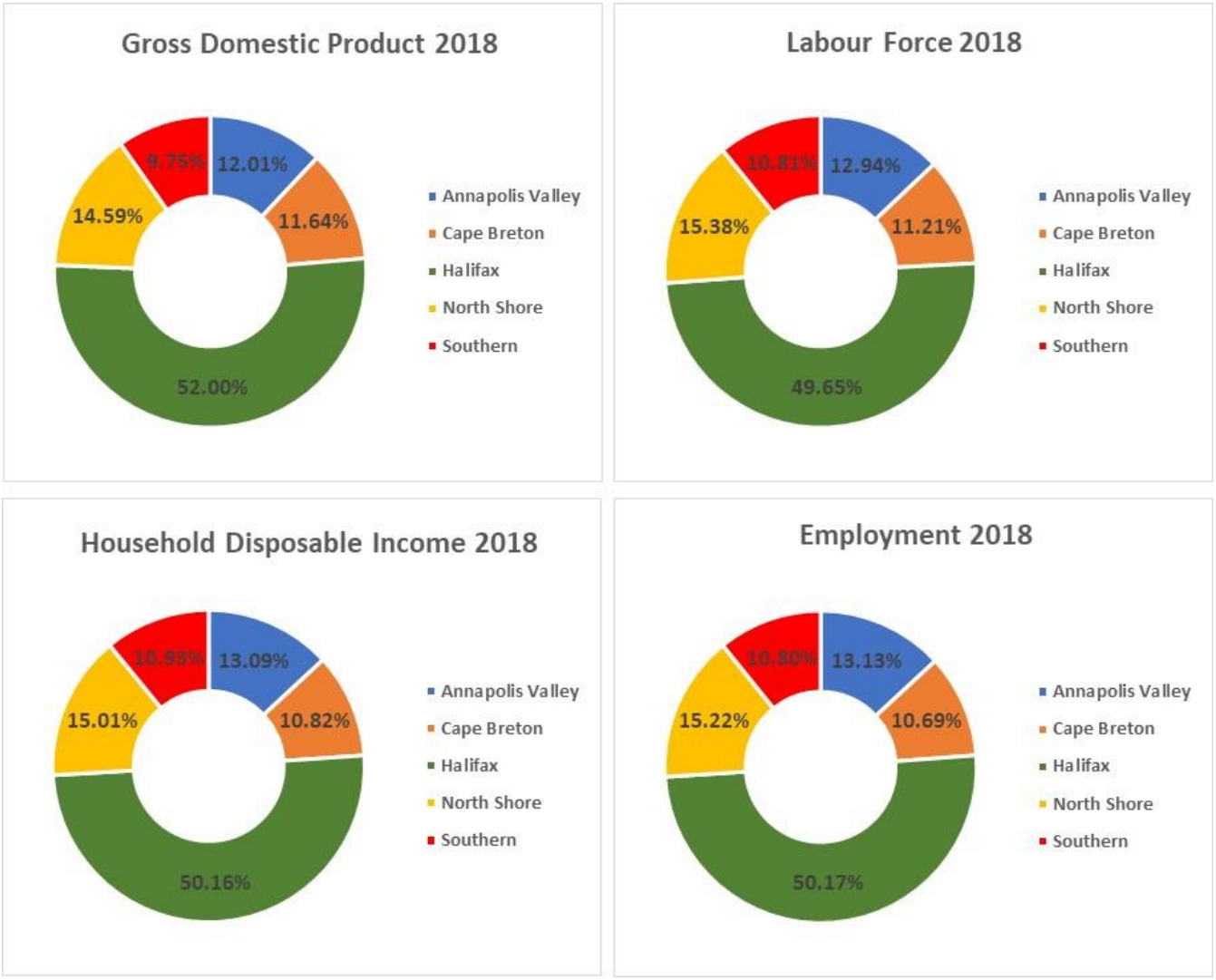
Nova Scotia's five economic regions are defined by Statistics Canada to represent relatively homogeneous economic regions. The regional landscape is dominated by Halifax with

- 52.00% of the province's gross domestic product;
- 50.16% of the province's personal income; and
- 50.17% of the province's employment

in 2018.

Figure 1 shows the share of economic activity by region for 2018.

Figure 1

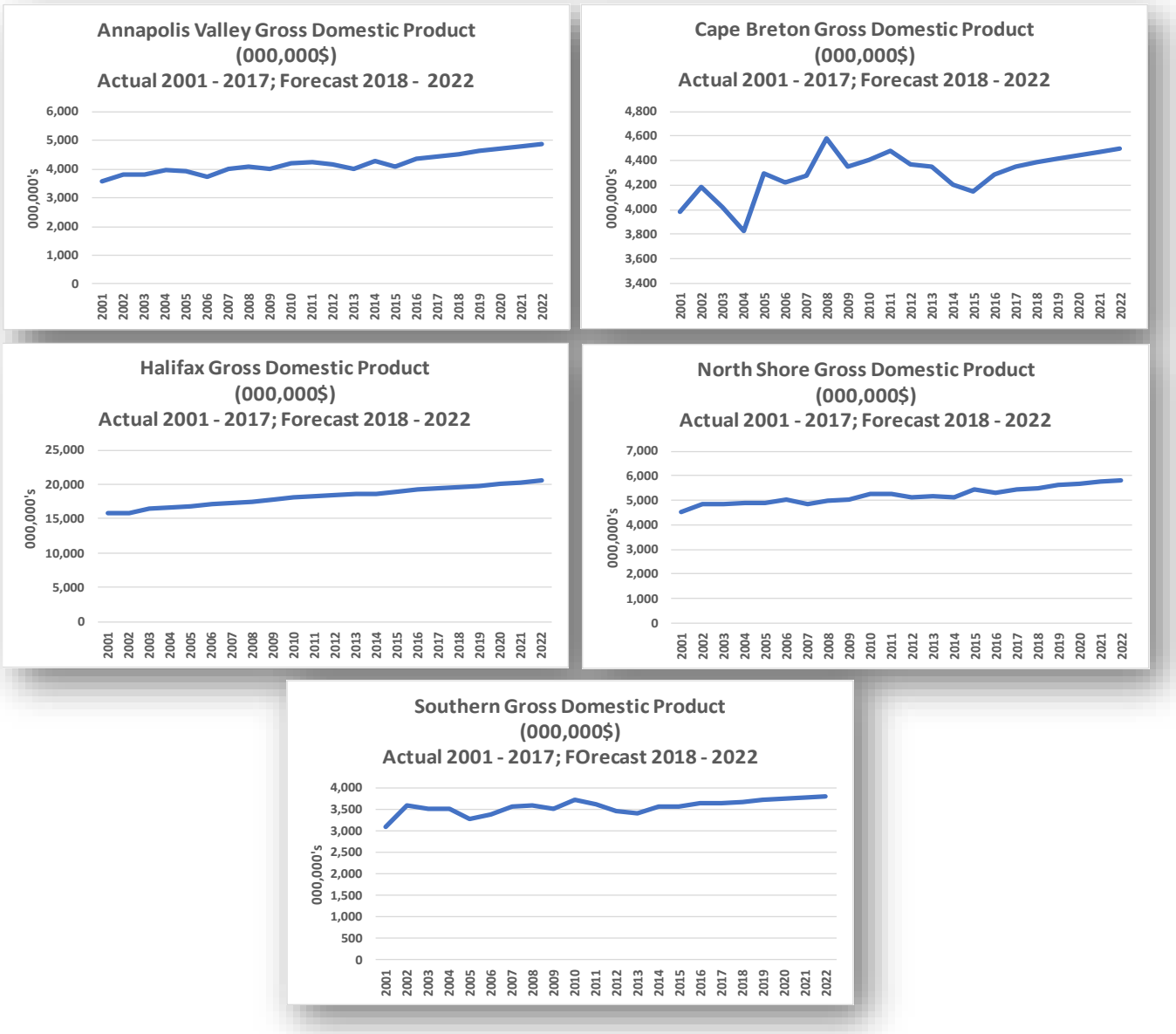


Source: Canmac Economics Limited

Gross Domestic Product - Nova Scotia continues to register weak economic growth

Average gross domestic product growth in the Nova Scotia economy at the regional level is projected to range from a low of .67% for the Cape Breton Region to a high of 1.89% for the Annapolis Region over the 2018 to 2022 period.

Figure 2 – Gross Domestic Product



Source: Canmac Economics Limited

The primary sector will see additional growth due to cannabis legalization. However much of the growth will be spurious – either coming from the underground economy or consumer expenditures switching from other consumer expenditures such as spirits, wine and craft beer. On a more positive front, the province will see the Gayes River gold mine moving to full production.

The recent federal infrastructure announcement will provide a sustained injection into the construction sector. Over the next 10 years federal infrastructure spending will increase by $828 million. These investments will make a positive difference in communities across the province. These federal expenditure priorities are:

- faster commute and travel time for more people, and easier movement of goods for business;
- cleaner air and water;
- reduced greenhouse gas emissions;
- smarter and more efficient cities;
- sustainable water management;
- enhanced public parks, recreational facilities and other spaces that make communities great places to live, and
- better transportation and digital infrastructure for people living in remote communities.

The Nova Scotia boatbuilding and shipbuilding sector will continue to provide a positive injection into the economy as the Irving Shipyard $30 billion combat ship construction project moves along. In addition, the Theriault & Sons boatbuilding operation has announced a $6.6 million expansion.

A second major Federal announcement has created a positive economic growth outlook for the province. The Federal government recently announced the Atlantic Region Ocean Supercluster project was a successful bidder for a Federal $950 million growth and technology innovation fund. The funding will work out to $125 - $250 million for the ocean

supercluster. Ottawa predicts the cluster will create 3,000 jobs and contribute $14 billion to the economy.

Tourism expenditures have shown solid growth recently – up 9% in the most recent season. It is expected that growth in tourism will provide a solid performance in the coming years after several years of weak growth.

Overall, over the next five years GDP growth will be more balanced between the Halifax Region, Cape Breton and the rural regions. HRM's GDP growth is expected to slow from its recent performance due primarily to a slowdown in non-residential building construction. The office sector in HRM is currently at a 20% plus vacancy rate which suggests a significant slowdown in construction once current projects are finished. On a more positive note, the HRM is at the centre of the Atlantic Region Ocean Industry – a priority industry in the Halifax economic development strategy. HRM will likely capture a major share of the Ocean Supercluster initiative. One component of the Ocean Supercluster that has already been funded by previous Federal/Provincial programs is the COVE project. The Cove is a uniquely designed commercial space for ocean technology innovators located on the Halifax waterfront.

Labour Markets Tighten!

Declining population growth – especially in the core population (15-65) plus low but growing participation rates in the growing 65 plus population results in a projected slow labour force growth. The modest growth in GDP results in modest employment growth. The overall result is a tightening in labour markets with falling unemployment rates.

Figure 3 – Labour Force

Source: Canmac Economics Limited

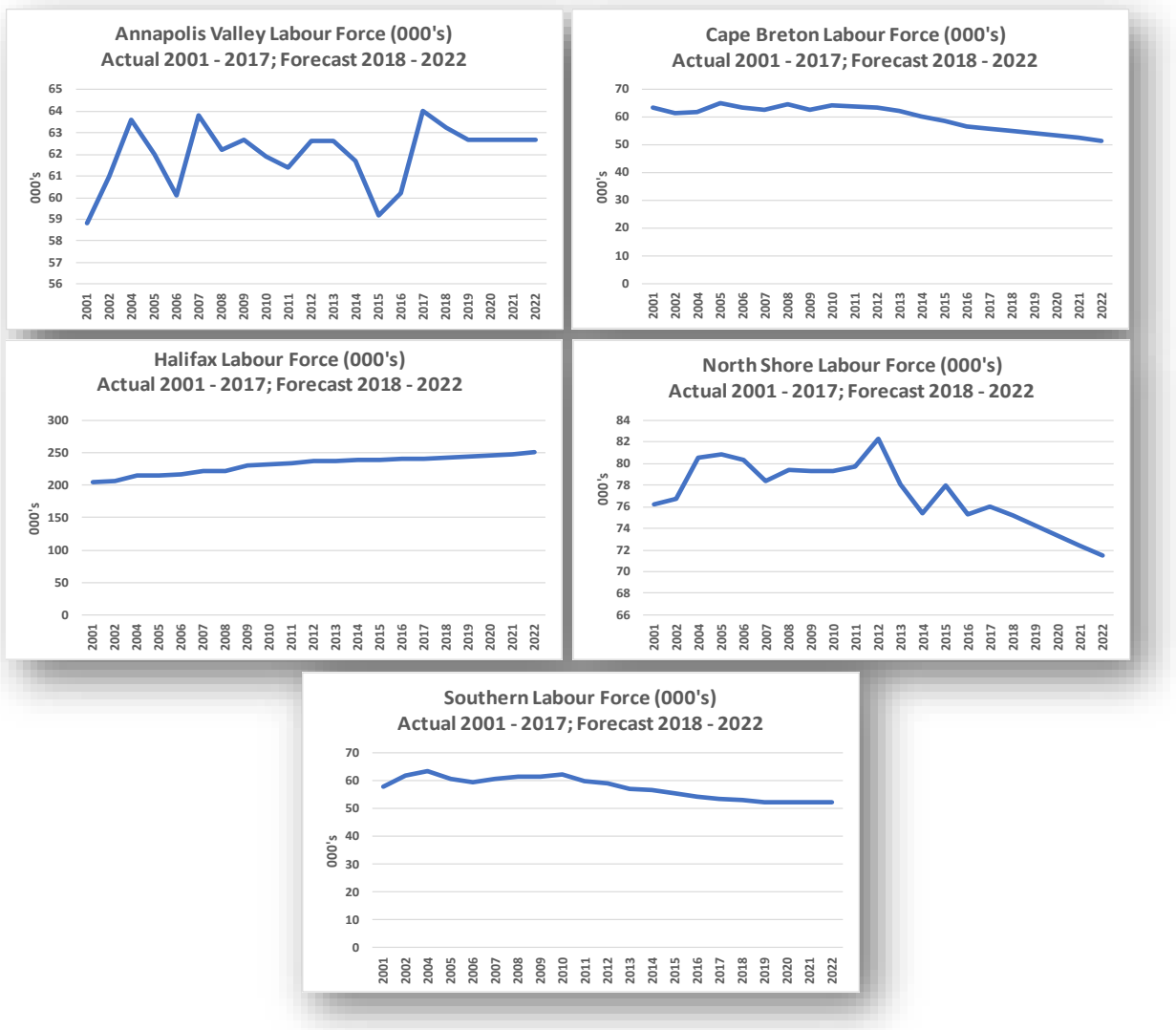


Figure 4 - Employment

Source: Canmac Economics Limited

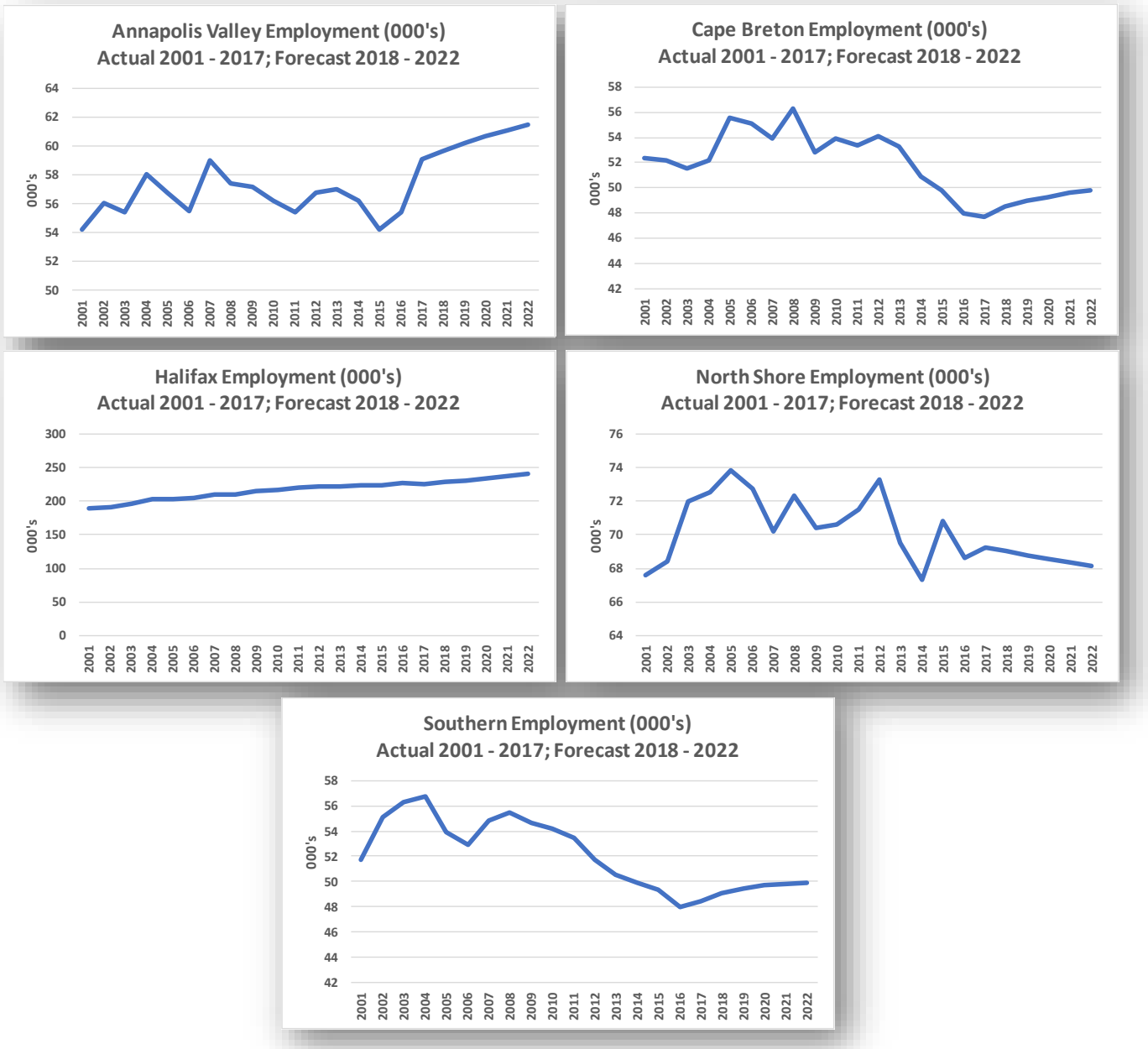
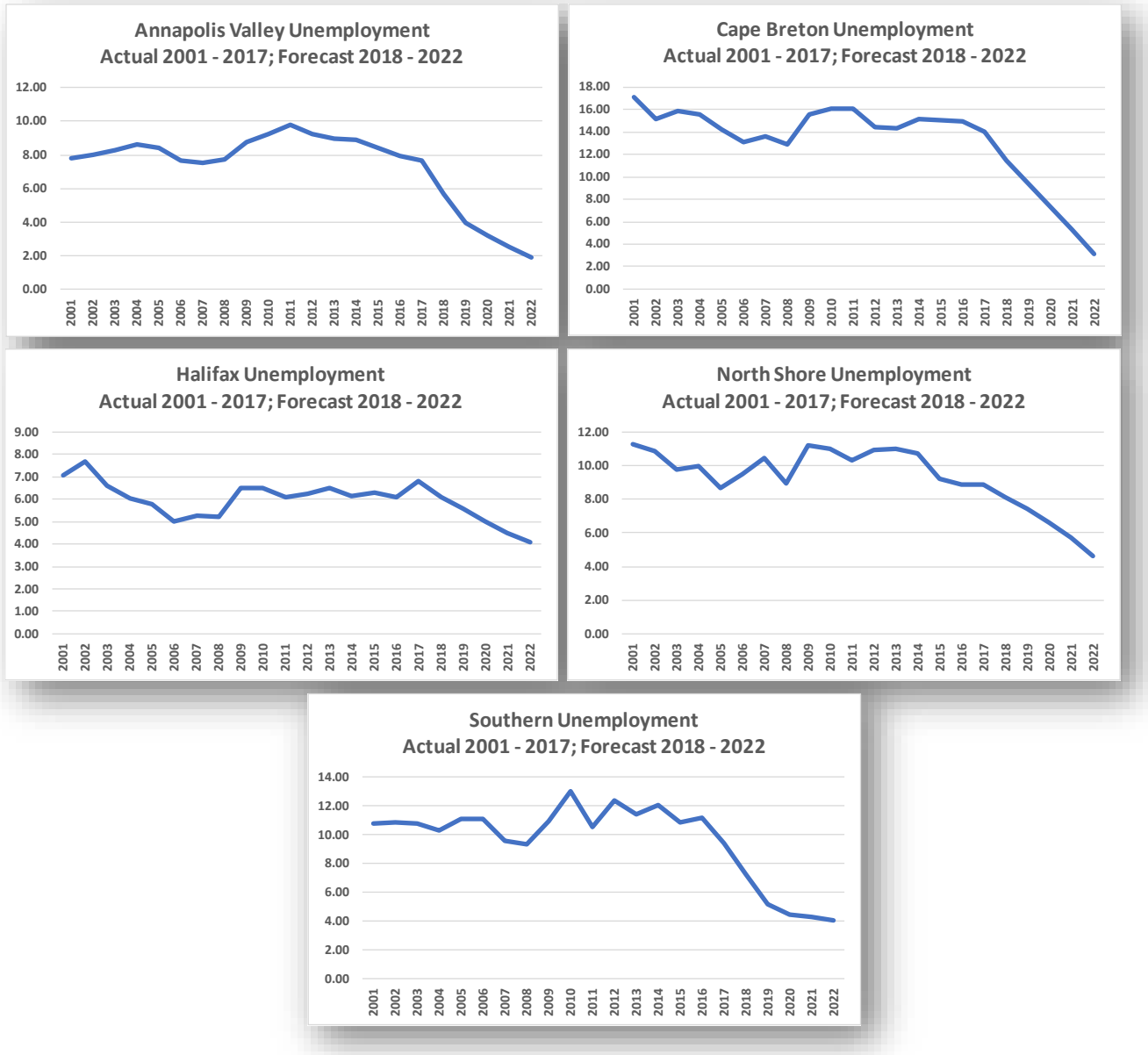


Figure 5 – Unemployment Rates



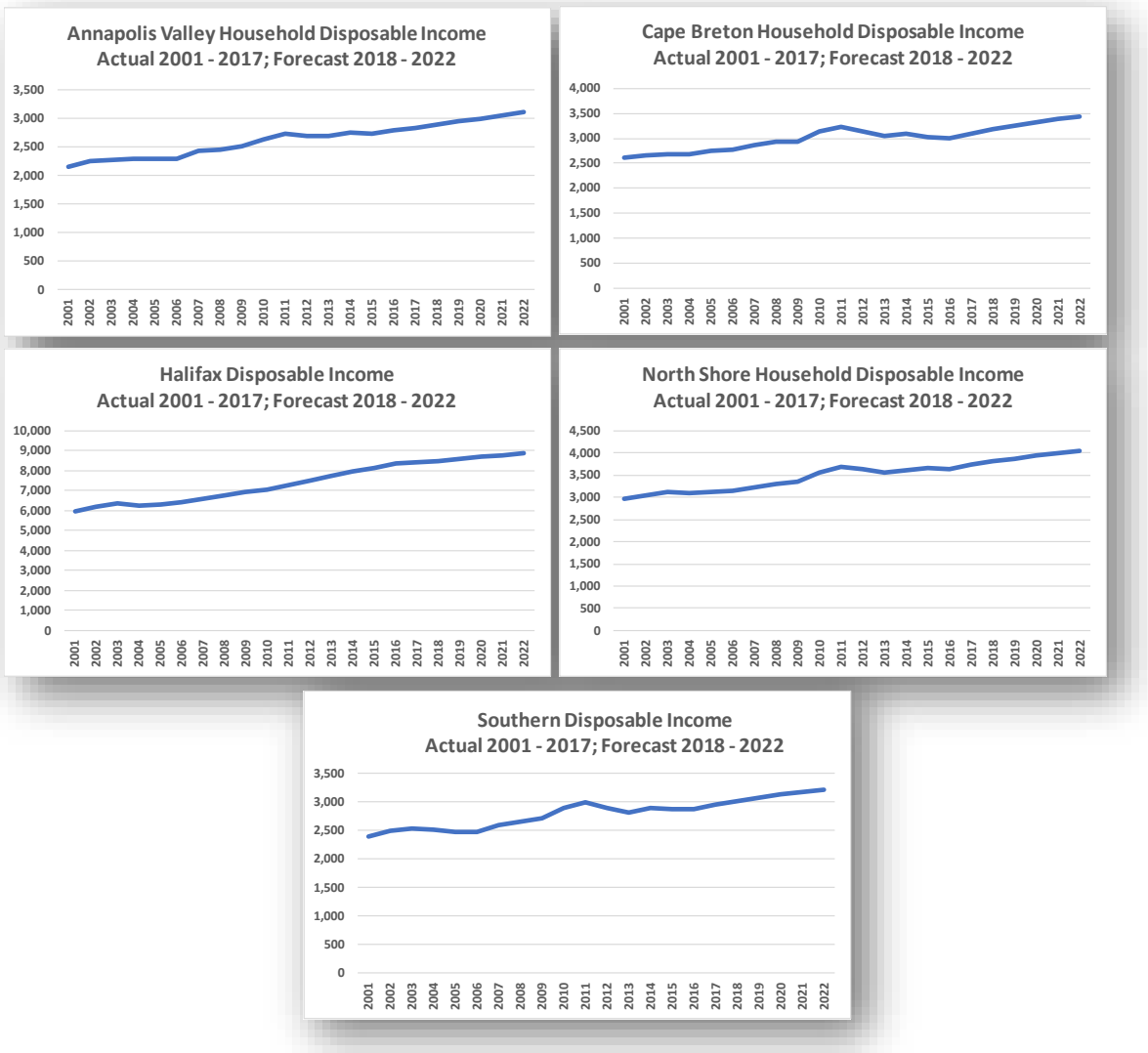
Source: Canmac Economics Limited

Household spending power increases with rise in personal disposable income.

Household personal disposable income is comprised of earned income plus transfers. Overtime, the ageing population will result in an increase in transfer payments from retirement income. This is partly offset by a fall in unemployment insurance payments with the falling unemployment rates. Growth in personal disposable income is expected to show modest growth over the forecast period – a reflection of the modest GDP growth and tight labour markets.

Figure 6 – Household Disposable Income

Source: Canmac Economics Limited



Appendix A – Detailed Macro Tables

Table A1 – Nova Scotia's Five Economic Regions Gross Domestic Product 2018 – 2022 Millions 2007 chained dollars					
	2018	2019	2020	2021	2022
Annapolis	4,521.5	4,638.1	4,715.4	4,791.7	4,862.8
Cape Breton	4,382.4	4,417.6	4,446.3	4,471.3	4,494.3
Halifax	19,574.2	19,810.5	20,064.8	20,327.4	20,593.1
North Shore	5,493.8	5,608.7	5,680.0	5,753.4	5,820.9
South Shore	3,670.0	3,707.5	3,734.2	3,759.2	3,782.7
Note: Regional GDP does not add up to NS GDP due to statistical variation					

Table A2 – Nova Scotia's Five Economic Regions
Labour Activity
2018 – 2022
Thousands

	2018	2019	2020	2021	2022
Annapolis					
Labour Force	63.2	62.7	62.7	62.7	62.7
Employment	59.6	60.2	60.7	61.1	61.5
Unemployment Rate	5.70	3.99	3.19	2.55	1.91
Cape Breton					
Labour Force	54.8	54.0	53.2	52.3	51.5
Employment	48.5	48.9	49.3	49.6	49.8
Unemployment Rate	11.50	9.44	7.33	5.16	3.30
Halifax					
Labour Force	242.5	244.3	246.1	247.9	250.2
Employment	227.7	230.7	233.7	236.8	240.0
Unemployment Rate	6.10	5.57	5.04	4.48	4.08
North Shore					
Labour Force	75.1	74.3	73.4	72.4	71.4
Employment	69.1	68.7	68.5	68.3	68.1
Unemployment Rate	7.99	7.54	6.68	5.66	4.62
South Shore					
Labour Force	52.8	52.1	52.0	52.0	52.0
Employment	49.0	49.4	49.7	49.8	49.9
Unemployment Rate	7.20	5.18	4.42	4.23	4.04

Table A3 – Nova Scotia's Five Economic Regions
Personal Disposable Income
2018 – 2022
Millions 2002 dollars

	2018	2019	2020	2021	2022
Annapolis	2,762.7	2,787.3	2,807.2	2,825.0	2,841.4
Cape Breton	2,282.6	2,302.2	2,317.1	2,329.6	2,340.8
Halifax	10,584.9	10,712.1	10,842.2	10,975.0	11,110.4
North Shore	3,167.4	3,153.7	3,144.6	3,135.6	3,127.3
South Shore	2,306.0	2,323.8	2,334.7	2,341.3	2,345.0

Appendix B – Methodology Note

Canmac estimates gross domestic product and personal disposable income for each of Nova Scotia's five regions. The estimates of GDP and PDI are done econometrically based on the Chow-Lin procedure.

The first stage in the analysis is to estimate provincial GDP and provincial disposable income as a function of the allocators to be used for the regions. We have

NSGDP = f(goods employment, services employment)

NSPDI = f(employment, population 65 plus)

These equations were estimated using traditional approaches and a Kaliman filter technique. This allows for regression parameters to change over time.

Once the provincial estimates were obtained then the regional estimates were computed as a function of the regional independent variables. Remaining errors between the sum of regions total and the Nova Scotia total were then allocated to each region on an equal share basis. The final step in the analysis was to forecast regional GDP and regional PDI as a function of the Nova Scotia variables and the regional variable lagged one period. This formed the basis for the prediction equation and has the effect of smoothing the regional values for the historic period.

Canmac Five Region Model

2018 Version

'NOVA SCOTIA REGION MACRO MODEL
'

'AVGDPMKT = 0.138380691942 * NSGDPMKT - 0.176831572661 * AVGDPMKT(-1)

AVGDPMKT = 0.168223841631 * NSGDPMKT - 0.208333420732 * AVGDPMKT(-1) - 913.01304023

AVGDPMKTSS = 0.625779869281 * AVGDPMKT + 0.412202715229 * AVGDPMKTSS(-1)

'AVHHYCPI = 0.000508013556988 * XXNSHHYCPI + 1.01448875556 * AVHHYCPI(-1)

AVHHYCPI = 1.158 * (37.14 * AVEMP) + .125 * 1580

'AVEMP = 0.0130857848884 * AVGDPMKTSS - .8

AVEMP = 0.00469829904153 * AVGDPMKTSS + 36.2174135519 + 1.2

'AVLF = 0.00430501696681 * AVPOP1524 - 0.000163226034146 * AVPOP2564 + 0.000310464516128 * AVPOP65PLUS + 2.1

AVLF = 0.00362751977866 * AVPOP1524 + 0.201937471862 * XXTIME+2.4

AVUN = (AVLF - AVEMP) / AVLF * 100

'CBGDPMKT = 0.0536050370764 * NSGDPMKT + 0.56398860849 * CBGDPMKT(-1)

CBGDPMKT = 0.0291011812511 * NSGDPMKT + 0.316189792519 * CBGDPMKT(-1) + 1908.66113494

CBGDPMKTSS = 0.731604675869 * CBGDPMKT + 0.244767800521 * CBGDPMKTSS(-1)

'CBHHYCPI = 0.0416690167744 * XXNSHHYCPI + 0.740971888427 * CBHHYCPI(-1)

CBHHYCPI = 1.158 * (37.14 * CBEMP) + .125 * 1580

'CBEMP = 0.0132638294897 * CBGDPMKTSS - 0.0415555484281 * CBEMP(-1) - 6.1

CBEMP = 0.0117085917306 * CBGDPMKTSS - 0.0357922112786 * CBEMP(-1) + 6.12198629505 - 5.4

'CBLF = - 0.00462393906062 * CBPOP1524 + 0.00192262245198 * CBPOP2564 + 7.71303271722e-05 * CBPOP65PLUS - 0.5

CBLF = 0.000697636623465 * CBPOP2564 + 0.331858126626 * XXTIME-2.5

CBUN = (CBLF - CBEMP) / CBLF * 100

HFXGDPMKT = 0.109204946013 * NSGDPMKT + 0.796736692885 * HFXGDPMKT(-1)

HFXGDPMKTSS = 0.122667132257 * HFXGDPMKT + 0.887596094656 * HFXGDPMKTSS(-1)

'HFXHHYCPI = 0.0951667895167 * XXNSHHYCPI + 0.769070108286 * HFXHHYCPI(-1)

HFXHHYCPI = 1.158 * (37.14 * HFXEMP) + .5 * 1580

HFXEMP = 0.0130285540534 * HFXGDPMKTSS - 0.0400588019228 * HFXEMP(-1) - 17.5

HFXLF = 0.0020825659106 * HFXPOP1524 + 0.000256939104764 * HFXPOP2564 + 0.00103262737582 * HFXPOP65PLUS - 2

HFXUN = (HFXLF - HFXEMP) / HFXLF * 100

'NSHGDPMKT = 0.175748587211 * NSGDPMKT - 0.204146669774 * NSHGDPMKT(-1)

NSHGDPMKT = 0.167321721887 * NSGDPMKT - 0.259583770022 * NSHGDPMKT(-1) + 576.599202628

NSHGDPMKTSS = 0.581604329066 * NSHGDPMKT + 0.456114131205 * NSHGDPMKTSS(-1)

'NSHHHYCPI = 0.0478620614148 * XXNSHHYCPI + 0.747273570981 * NSHHHYCPI(-1)

NSHHHYCPI = 1.158 * (37.14 * NSHEMP) + .125 * 1580

'NSHEMP = 0.0133275782437 * NSHGDPMKTSS - 0.0180779453263 * NSHEMP(-1) - 5.4

NSHEMP = - 0.00266038246105 * NSHGDPMKT + 0.0695861871152 * NSHEMP(-1) + 79.4528303281 - .6

'NSHLF = - 0.000541397513233 * NSHPOP1524 + 0.000934870640105 * NSHPOP2564 + 0.000319682805394 * NSHPOP65PLUS + 0.4

NSHLF = 0.00019738676243 * NSHPOP1524 + 0.000764033861702 * NSHPOP2564 + 0.328679567913 * XXTIME + .2

NSHUN = (NSHLF - NSHEMP) / NSHLF * 100

'SRGDPMKT = 0.0770958797868 * NSGDPMKT + 0.243133595287 * SRGDPMKT(-1)

SRGDPMKT = 0.0494865330875 * NSGDPMKT - 0.0844354736326 * SRGDPMKT(-1) + 2107.33406363

SRGDPMKTSS = 0.469259947156 * SRGDPMKT + 0.582729700823 * SRGDPMKTSS(-1)

'SRHHYCPI = 0.038499208664 * XXNSHHYCPI + 0.743670667156 * SRHHYCPI(-1)

SRHHYCPI = 1.158 * (37.14 * SREMP) + .125 * 1580

'SREMP = 0.0134343018285 * SRGDPMKTSS - 0.00638302428228 * SREMP(-1) - 4.6
'

'SREMP = 0.0147689269902 * SRGDPMKTSS - 0.0100774445728 * SREMP(-1) - 5.09681614966
'

'SREMP = 0.0144537586396 * SRGDPMKTSS - 4.35436084676 - 3.5

SREMP = 0.0100528668362 * SRGDPMKTSS + 20.8446322762 - 0.269218439363 * XXTIME-1.87

'SRLF = - 0.00203185894032 * SRPOP1524 + 0.0012935687073 * SRPOP2564 + 5.76272977058e-05 * SRPOP65PLUS + 0.3

SRLF = 0.000849862759783 * SRPOP2564 + 0.123845751092 * XXTIME-1.1

SRUN = (SRLF - SREMP) / SRLF * 100