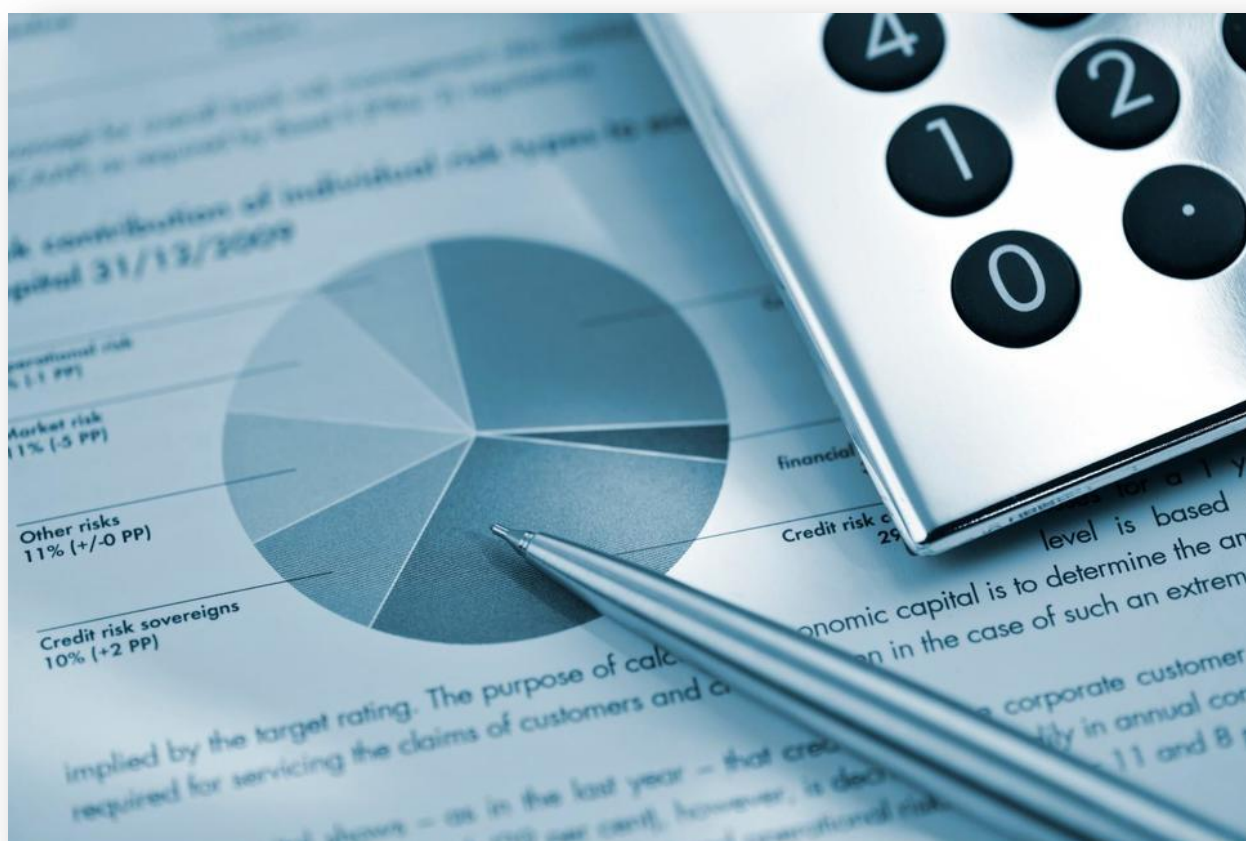


# Macro Economic Outlook 2017 – 2021 NOVA SCOTIA



Canmac Economics Ltd.  
Strategic Outlook Service

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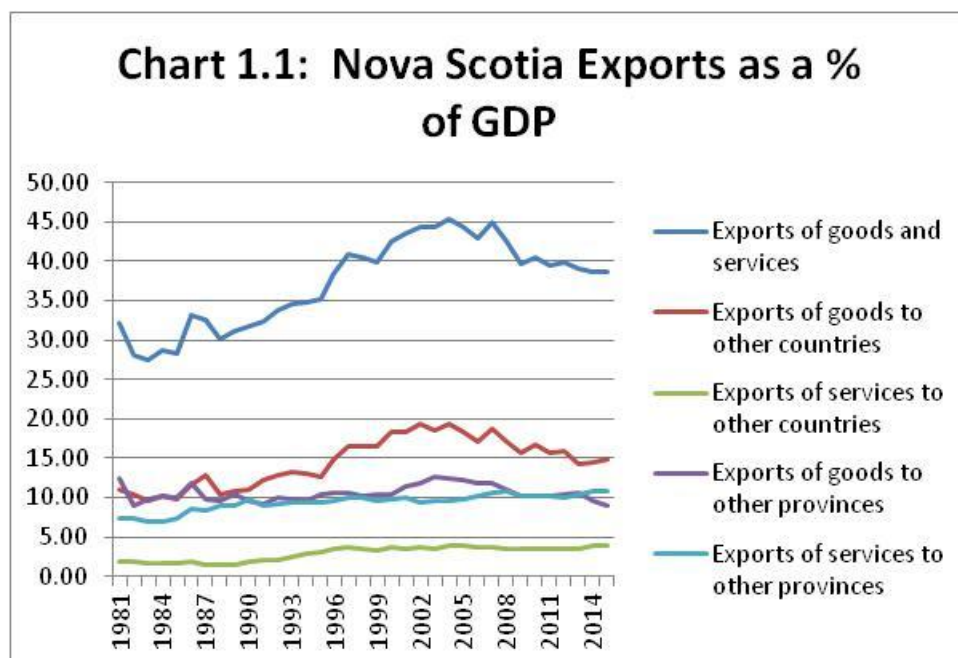
## Section 1 – Nova Scotia: Economic Drivers

The Nova Scotia economy is a small, open economy. Accordingly its future growth and growth potential is dependent on the future course of three main external drivers as follows:

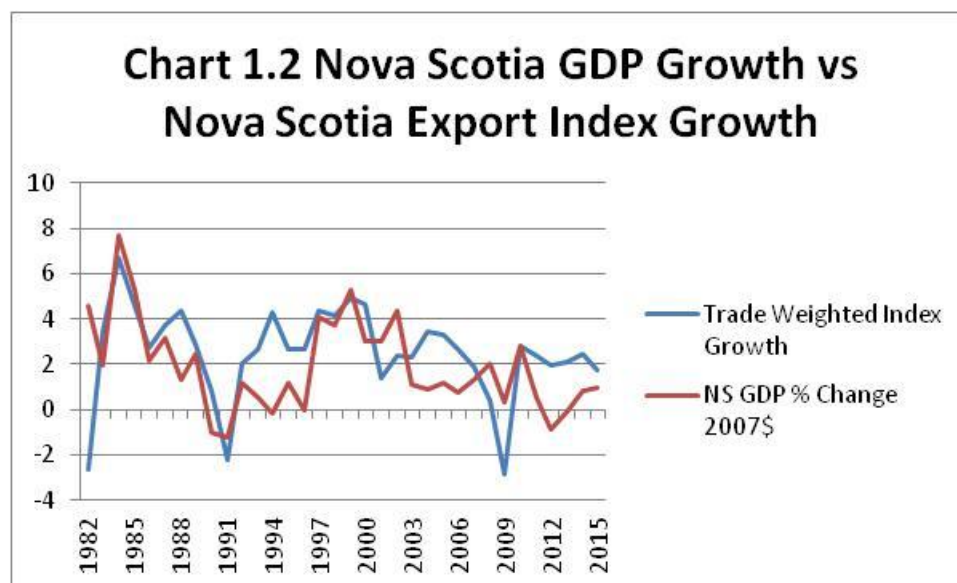
- 1) Success in export markets
- 2) Optimal monetary policy
- 3) Optimal fiscal policy

### 1.1 External Economic Environment

Nova Scotia's exports as a percent of Gross Domestic Product are shown in Chart 1.1 for the 1981 to 2015 period.



Over this historic period, the economy overall has seen a downward trend in exports as a percent of gross domestic product since 2005 while within the export sector, services have increased their share. Nova Scotia's world export markets are dominated by the United States, China and the U.K. Its sales to other Canadian provinces are also an equally important export market. Chart 1.2 provides a review of the growth in Nova Scotia's GDP and the growth in the U.S. economy and growth in the Canadian economy weighted by the Nova Scotia world export share and the Nova Scotia Canadian export share. It is clear from Chart 1.2 that as Nova Scotia's export sector grows so does the economy. With recessions induced by weak export markets in 1991, 2009, Nova Scotia's growth also dipped into negative territory. The additional volatility shown by GDP growth for Nova Scotia in Chart 1.2 is due to investment activity which tends to be lumpy for small economies like Nova Scotia.

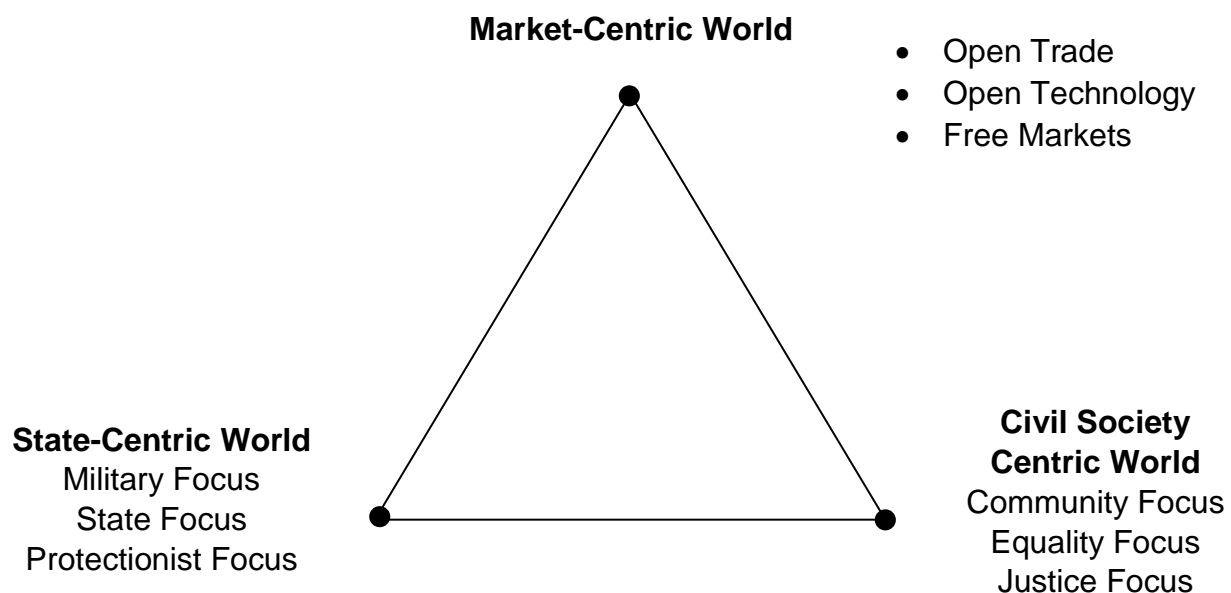


There are considerable risks associated with the likely growth path of the world economy. These include:

**1) A move away from open trade to a more protectionist policy by countries.**

This includes the June 2016 UK exit decision from the European Union and the election of Trump to the U.S. presidency as the most recent examples. The reaction of other countries to this protectionism will play out over the forecast period.

In the report “The Shell Global Scenarios to 2025 – The Future Business Environment: Trends, Trade-offs and Choices” there is a useful discussion on potential future possible political – economic environments. Using Trimetric graphs as shown below, the authors examine three fundamental forces that shape society as follows:



The authors conclude that if society moves to a state-centric world GDP growth will be lower by 1%, i.e. if market centric world has growth of 2.5% then a state-centric world would have growth of 1.5%.

## 2) China moving from exports to domestic consumption as its engine of growth.

Any policy adjustment has the potential to create uncertainty. “The risk in China is heightened with a still rising credit to GDP ratio and lack of decisive progress in addressing corporate debt and governance concerns in state-owned enterprises.” *World Bank World Economic Outlook, October, 2016.*

## 3) Deflation traps

Advanced economies are still operating at below potential due to the global financial crisis of 2008-09. The risk of a deflation trap – similar to that experienced by Japan over the last twenty years is significant. In an era of falling prices economic agents have an incentive to defer consumption to purchase in the future when prices have already fallen. Over the forecast period, monetary policy and fiscal policy will have to be accommodative to manage an optimal inflation level for optimal growth.

Table 1.1 shows the projected consensus output growth for major countries for the 2016 to 2022 period that are used as a basis for Canmac’s Nova Scotia export projections.

Table 1.1: World Output Growth – Selected Countries 2016 - 2022							
Country	2016	2017	2018	2019	2020	2021	2022
<b>Advanced Economies</b>	1.6	1.9	2.1	2.1	2.1	2.1	2.1
<b>United States</b>	1.6	2.2	2.1	2.1	2.1	2.1	2.1
<b>Euro Area</b>	1.7	1.5	1.7	1.7	1.7	1.7	1.7
<b>United Kingdom</b>	1.8	1.1	1.9	1.9	1.9	1.9	1.9
<b>Canada</b>	1.2	2.0	2.1	2.2	2.2	2.2	2.2
<b>China</b>	6.6	6.2	6.2	6.2	6.2	5.8	5.8
<b>India</b>	7.6	7.6	7.6	7.6	7.6	8.1	8.1
<b>Source: World Bank Economic Outlook, October 2016, Canmac Economics Ltd.</b>							

Notes: Outlook is Canmac’s view based on updated data and economic outlook from various sources World Bank Oct. 2016, Canadian Federal budget, Bank of Canada

**IN CONCLUSION, CANMAC'S OUTLOOK FOR THE WORLD ECONOMY IS ONE OF MODEST GROWTH IN NOVA SCOTIA'S TRADITIONAL MARKETS AND STRONGER GROWTH IN THE EMERGING MARKETS OF SOUTH EAST ASIA.**

## 1.2 Monetary Policy Environment

The objective of the Bank of Canada is to create an environment of stable prices. More specifically, the Bank's objective is to keep the general inflation rate at 2% per year on average. The primary policy tools the Central Bank has to achieve this is the overnight rate (policy interest rate) and the flexible exchange rate.

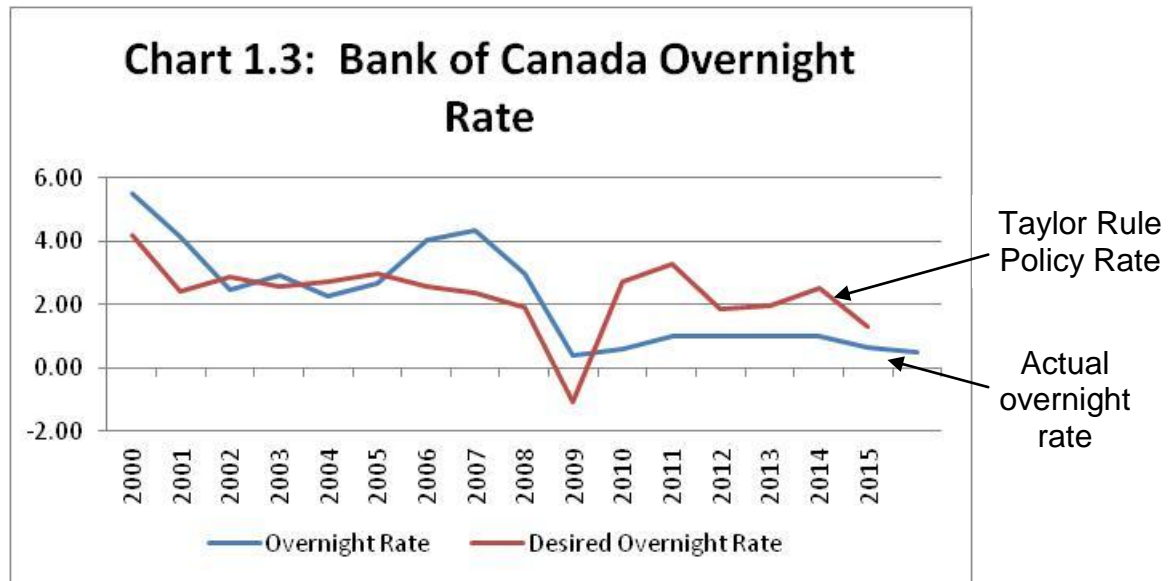
The Central Bank desires to achieve interest rates that are optimal for economic growth of the Canadian economy. Hence it actively manages the policy interest rate and allows the exchange rate to be determined by the forces of supply and demand. (If the Central Bank wanted to peg the Canadian dollar to say the U.S. dollar then it would have to set interest rates to achieve this which means it gives up the ability to set rates that are optimal for the Canadian economy.) Although the Bank of Canada's stated objective is to manage interest rates and follow a flexible exchange rate policy, the Bank is still constrained in its policy space by exchange rate movements.

The current economic environment is one of a gradual rise in interest rates in the U.S. by the Federal Reserve. The U.S. economy is approaching full employment and there is concern that the Trump administration's policy intentions will be inflationary. Since the transmission of interest rate increases can take six to forty-eight months to impact on the investment decisions in the economy, the Federal Reserve is raising rates modestly now. Higher interest rates in the U.S. means investments will flow into the U.S. increasing demand for U.S. dollars which lowers the Canadian dollar exchange rate. The impact of this in the short run is inflationary as it raises import prices (and lowers export prices). Hence the Bank of Canada's concern for inflation will result in the bank raising interest rates to counter balance the rising rates in the U.S. – raising Canada's rates to protect against inflationary pressures.



The Taylor rule also provides an indication of the likely projection of the policy interest rate by equating the bank's policy interest rate to the policy objective of 2% inflation. The Taylor rule is defined as: Taylor Monetary Policy Rate = real interest rate + 0.5 (output gap) + 0.5 (inflation gap). If current inflation is above target then the policy response will be to increase the overnight rate. Similarly, if the current output capacity is above the economy's potential then inflation pressure is building and the policy response is to increase the overnight rate to lower demand.

In Chart 1.3, we set the Taylor rule for the desired overnight rate at the real interest rate (3%) +  $\frac{1}{2}$  times the current inflation less 2.0 +  $\frac{1}{2}$  times the current growth in GDP less 3.5. As shown in Chart 1.3 the Taylor rule has the desired rate above the overnight rate – signaling a likely rise in the overnight rate. Given a projection of the Canadian economy's growth of 2.2% and inflation rate of 2.0% we predict an overnight rate on average at 2.2%. (Recent refinements to the Taylor rule have included weighting the potential for disinflation into the Taylor equation. (Business Economics Vol. 51, No. 4 A New Framework to Estimate the Near-Term Path of the Fed Funds Rate n Bullard et al.) The results suggest the policy rate would stay lower than that predicted by the standard Taylor rule formula if inflation is significantly below target.)



A final factor that has accounted for a lower policy rate in the recent past is the drop in world oil prices. The Canadian exchange rate is sensitive to world oil prices i.e. fears of deflationary pressures in the short run, the Bank of Canada moved to keep interest rates low. Oil prices have been rising modestly and are expected to remain so over the forecast period which takes pressure off the Bank of Canada to keep rates lower.

As noted by the Governor of the Bank of Canada (Business Economics Volume 50, number 4:)

“Let me give a real-life example to illustrate how we put our risk-management approach into practice. Last year, before the oil price shock hit the Canadian economy, our policy was ..... with inflation on course to return to target in a reasonable time frame and vulnerabilities in the household sector looking as if they would evolve constructively.

The oil price shock changed the outlook dramatically. It represented a potentially sizable reduction of our national income and threatened to drive inflation below target for an unacceptably long time. The expected sharp decline in economic activity and employment also represented a possible trigger for Canadian financial stability risks related to elevated household debt. Our monetary policy was knocked out of the zone,

and the downside risk to future inflation was material. So, in January, we lowered our policy interest rate, and we did so again six months later as the impact of the shock became clear.”

**IN CONCLUSION, THE ASSUMPTIONS FOR THE NOVA SCOTIA MACRO OUTLOOK IS FOR THE EXCHANGE RATE TO REMAIN IN THE 70 TO 80 CENT RANGE RELATIVE TO THE U.S. DOLLAR AND FOR INTEREST RATES TO RISE VERY MODESTLY. TABLE 1.2 SHOWS THE IMPLIED FORECAST FOR SOME REPRESENTATIVE INTEREST RATES BY YEAR GIVEN OUR ASSUMPTIONS ON THE POLICY RATE.**

<b>Table 1.2</b>			
<b>Monetary Policy Environment</b>			
<b>Selected Interest Rates</b>			
<b>2000 - 2022</b>			
	<b>Bank Rate</b>	<b>Chartered Bank Prime Business</b>	<b>Chartered Bank Conventional - 5 Year Mortgage</b>
<b>2000</b>	5.77	7.27	8.35
<b>2001</b>	4.31	5.81	7.40
<b>2002</b>	2.71	4.21	7.02
<b>2003</b>	3.19	4.69	6.39
<b>2004</b>	2.50	4.00	6.24
<b>2005</b>	2.92	4.42	5.99
<b>2006</b>	4.31	5.81	6.66
<b>2007</b>	4.60	6.10	7.07
<b>2008</b>	3.21	4.73	7.06
<b>2009</b>	0.65	2.40	5.63
<b>2010</b>	0.85	2.60	5.61
<b>2011</b>	1.25	3.00	5.37
<b>2012</b>	1.25	3.00	5.27
<b>2013</b>	1.25	3.00	5.24
<b>2014</b>	1.25	3.00	4.88
<b>2015</b>	0.88	2.78	4.67
<b>2016</b>	0.75	2.70	4.66
<b>2017</b>	0.90	2.85	4.81
<b>2018</b>	1.00	2.95	4.91
<b>2019</b>	1.20	3.15	5.11
<b>2020</b>	1.25	3.20	5.16
<b>2021</b>	1.50	3.45	5.41
<b>2022</b>	1.50	3.45	5.41

### 1.3 Fiscal Policy

The overall objective of government fiscal policy is to minimize business cycle fluctuations and to contribute to the economic growth of the economy. In the short run, running fiscal deficits stimulate the economy. However, in the long run debt payments by the provincial government act as a constraint on growth.

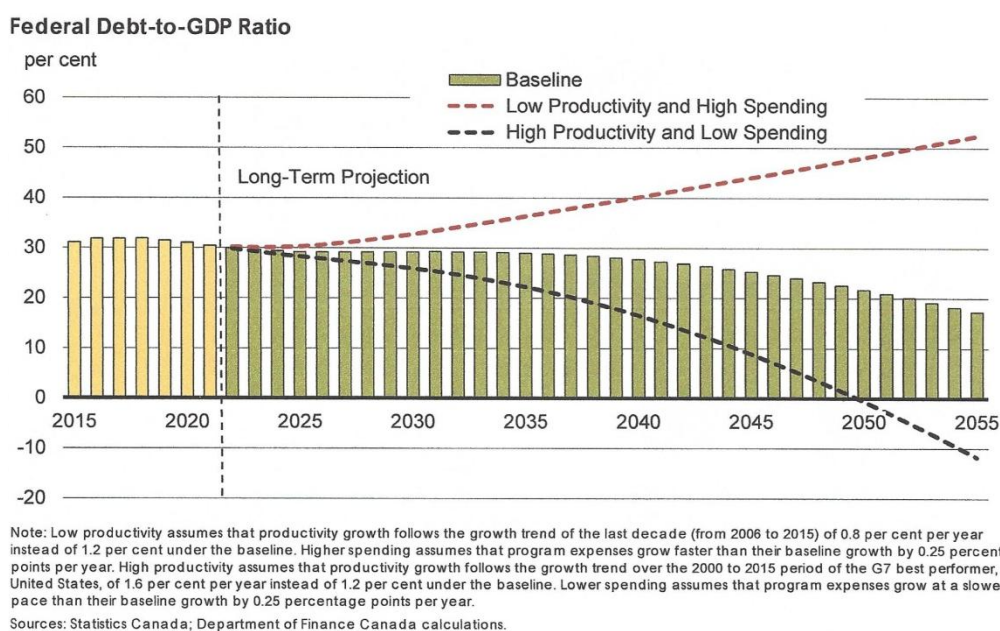
The Nova Scotia economy is significantly dependent on the Federal government for its economic growth. Federal government expenditures in the province are significantly greater than what the federal government takes out in terms of taxes etc. Table 1.3 shows the Federal 'deficit' for Nova Scotia.

Table 1.3 Federal Revenue, Expenditure and Budgetary Balance in Nova Scotia (Millions\$)							
	Estimates	2009	2010	2011	2012	2013	2014
<b>Federal Government in Nova Scotia</b>	Government Revenue	5,524	5,424	5,682	5,698	5,900	6,177
	Government Expenditure	11,736	11,935	12,227	12,470	12,584	12,535
	Equals: net lending or net borrowing	-6,207	-6,508	-6,493	-6,742	-6,603	-5,899
<b>Source: Statistics Canada Table 384-0047</b>							

Recent Federal budget and budget updates point to an expansionary fiscal policy. Chart 1.4 shows the expected Federal Debt-to-GDP ratio over the forecast period and beyond. Under the base case, the Federal Debt-to-GDP ratio is projected to rise above 30 percent in the early years before falling back to 30 percent in 2022. It is instructive to see, as shown in Chart 1.4, how sensitive the projections are to alternative assumptions.

“For example, a combination of lower-than-expected productivity growth (following the growth trend of the last decade) and higher-than-expected spending growth (equal to a quarter of a percentage point more per year) would be sufficient to put at risk the fiscal sustainability of the federal government. On the flip side, the combination of higher-than-expected productivity growth (catching up to the U.S. productivity growth trend) and lower-than-expected program spending growth (equal to a quarter of a percentage point less per year) would lead to budgetary surpluses much sooner and more rapid debt-to-GDP ratio reductions. In this context, it is important for the Government to manage its finances prudently and invest in the economy in order to preserve Canada’s sound fiscal situation and respond to the impacts of the demographic transition.”

Chart 1.4



**OUR FORECAST ASSUMPTIONS ARE FOR AN ABOVE AVERAGE INCREASE IN FEDERAL EXPENDITURES IN THE PROVINCE (+ 0.5% OVER TREND).**

## Section 2 – Nova Scotia Macro Outlook

The Nova Scotia macroeconomic outlook is based on Canmac's proprietary economic models of the region. First we discuss the demographic outlook. This is followed by the key macro indicators – GDP, inflation and unemployment. We conclude with a brief discussion of policy issues. The appendix provides the forecast details.

### 2.1 Demographic Outlook

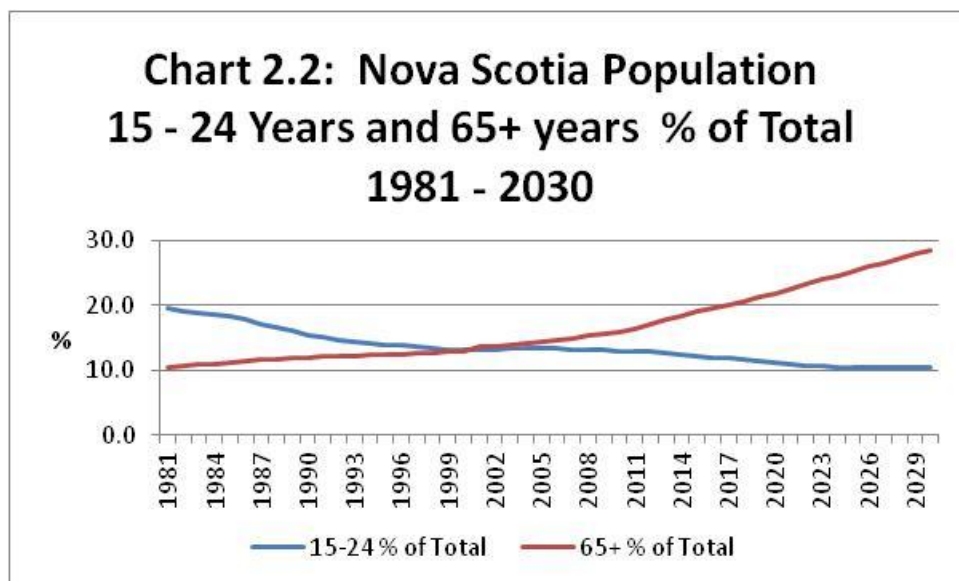
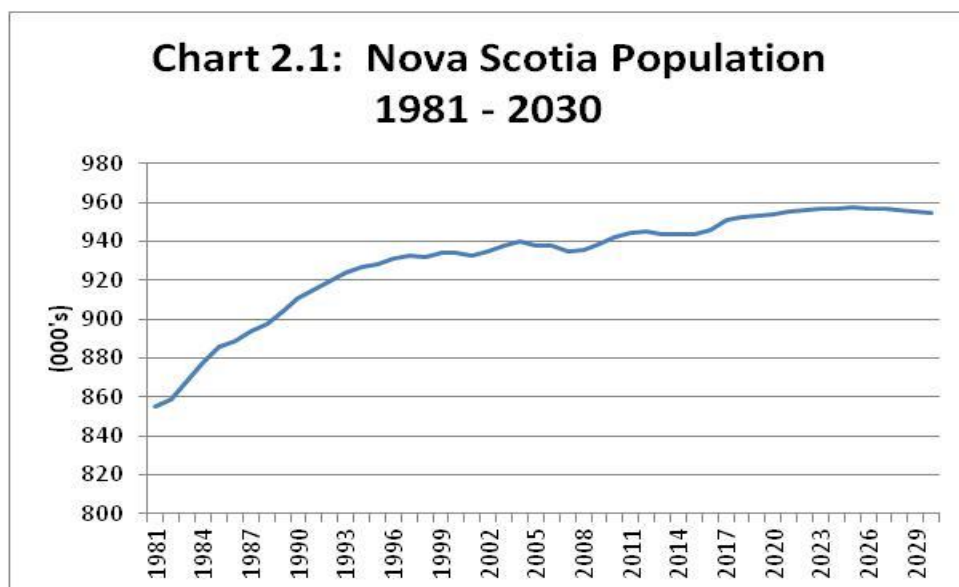
The demographic outlook is a key determinant of the economic growth path – demographics explains 2/3 of everything is a popular mantra. Canmac's demographic projection is derived from Statistics Canada's latest population scenarios for Nova Scotia updated with the latest population actual. The key features of the population forecast are as follows:

- Nova Scotia's population is growing very slowly.
- Nova Scotia's population is ageing.

Nova Scotia's population was estimated at 946 thousand in 2016 and is projected to reach 955 thousand by 2030. The population 15-24 represented 12.1 percent of total population in 2015 and is projected to represent 10.4 percent by 2030. The population 65 plus was 18.9 percent in 2015 and is projected to be 28.6 percent by 2030.

Demographics impact both the demand side and the supply side of the Nova Scotia economy. Some 70% of gross domestic product emanates from household expenditures. The slow growth in the population will, other things being equal, result in a slow growth in consumer expenditures. However, a growing retirement community that receives pension payments represents, all other things being equal, an injection of new money into the Nova Scotia economy and hence a new economic stimulus for the economy. So given that Nova Scotia can maintain its historic growth in the export sector, the growth in the retirement community is a positive stimulus to the economy.

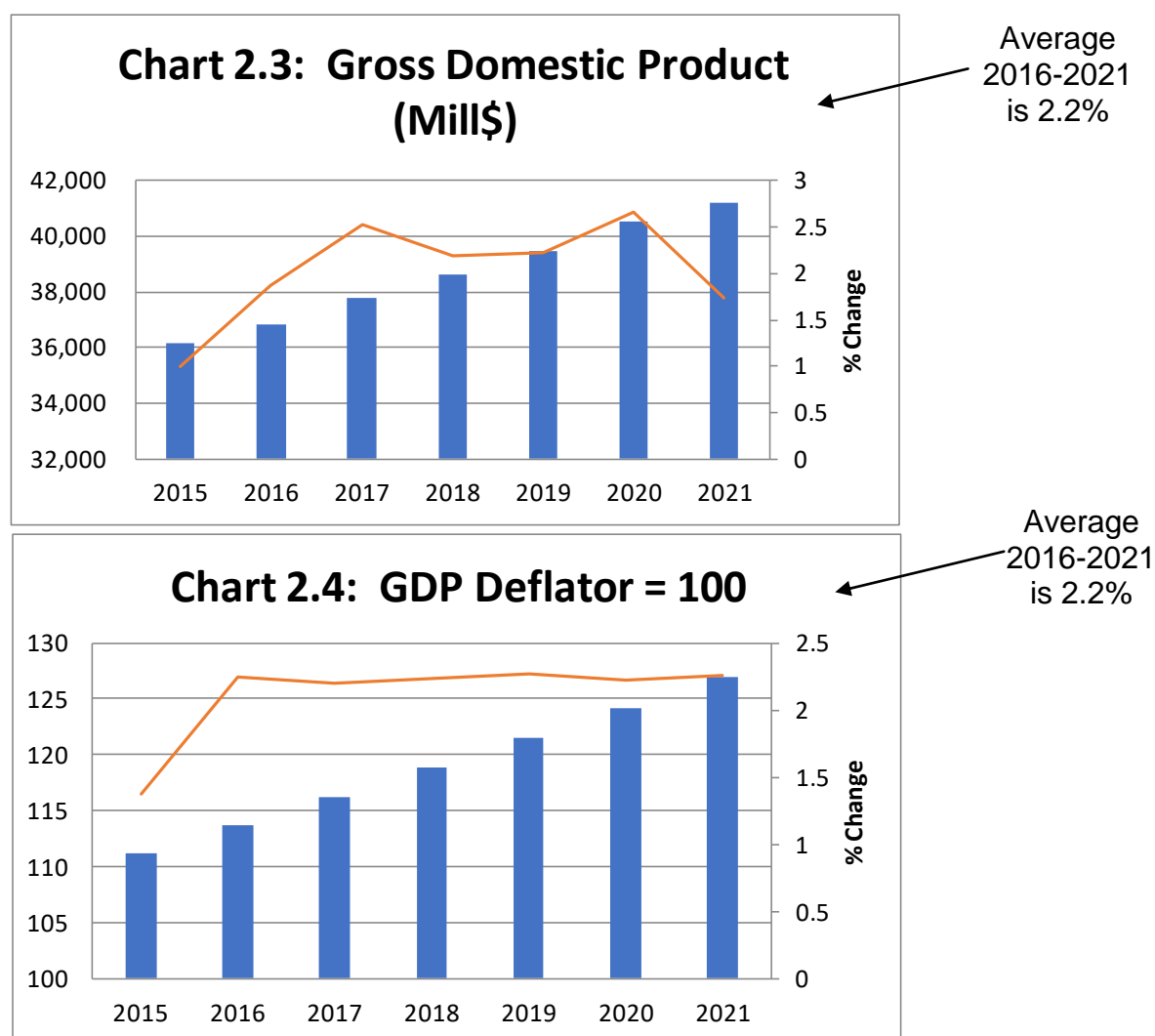
On the supply side, the demographic outlook results in a slowing of the labour force. If Nova Scotia could have the same potential for growth that it has had historically then it could not meet this demand and it would enter a period of labour constrained growth. Canmac's macro model assumes a migration level of 3,500 on average in its demographic projections. Furthermore, the slowing labour force implies less unemployment and hence unemployment transfers to the province. This offsets somewhat the new injection from retirement income growth.

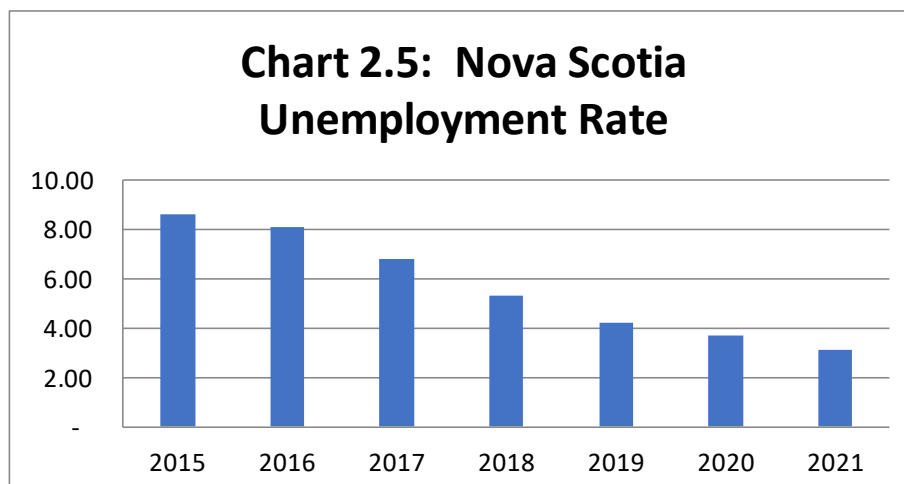




## 2.2 Economic Outlook – Base Case

Nova Scotia, under the base case, will exhibit modest growth reflecting weak global demand and modest population growth. Federal government infrastructure spending and a \$30 billion Irving shipyard contract will provide stimulus to the economy over the projection period. A slow population growth will result in a slow growth in labour supply. The net result is that unemployment will decrease to the 3% range by 2021. Inflation rates will remain in the 2% range consistent with monetary policy. Falling unemployment rates will put upward pressure on wage rates towards the end of the forecast period.





### ***Forecast Risk***

The historic evidence reveals the Nova Scotia economy has grown from a high of 6.42% to a low of -1.29%. Average growth was 1.88% with a standard deviation of 1.74%. One estimate of the risk to the forecast is that the economy could grow at 0.14% or lower and alternatively the economy will grow at 3.62% or higher i.e., one standard deviation from the average growth.

The key to long term growth are the assumptions on the external environment. A more successful monetary and fiscal policy environment in the global economy would result in stronger growth in Nova Scotia's trading partners. Nova Scotia is entering a constrained labour force market. It will not be able to realize its growth potential unless productivity increases or additional labour supply is forthcoming from in-migration or higher participation rates.

### 2.3 Policy Issues

Canmac's macro outlook implies some redirection of policy issues facing governments. First, the shifting demographic structure is a global trend not specific to Nova Scotia (see Chart 2.6). One major demographic issue is the shrinking labour force. There are only three generic ways to effectively solve this problem:

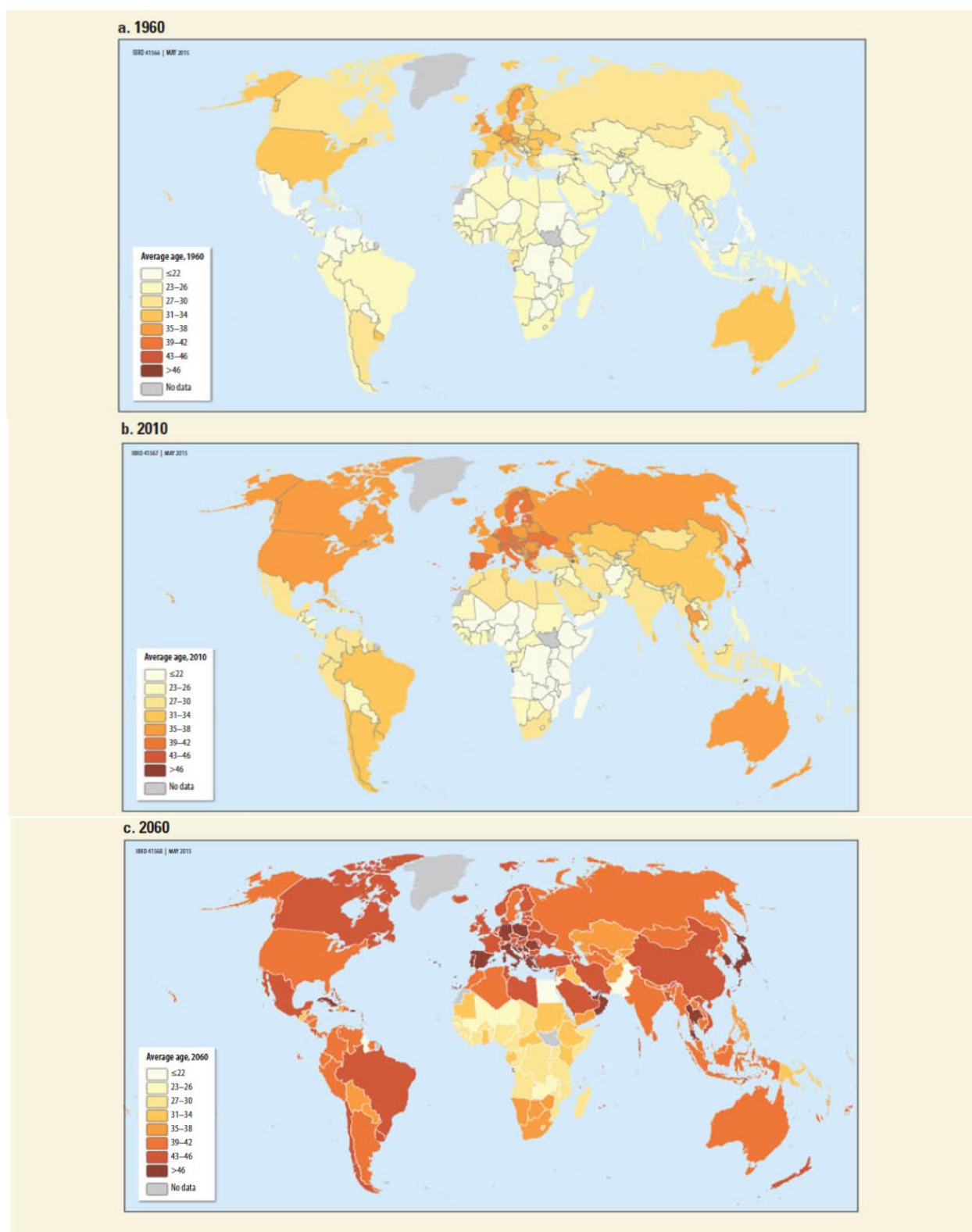
- 1) Increase Productivity
- 2) Increase Migration
- 3) Increases Participation Rates

Increasing productivity is the best strategy as it enables higher wages. However, productivity growth has been slowing worldwide (World Bank Outlook, October 2016) which implies it will be difficult to achieve. In fact, it is likely that some combination of all three policy options will be required.

Our base case projection has a tight labour market with unemployment at the 3% level in 2021. A potential constraint on achieving this level is a skills mismatch – growth in industries that are not consistent with labour skills available. Hence, government training initiatives will become a higher policy issue in the future.

A second major emerging policy issue is infrastructure spending. The Federal Governments recent budget is an expansive fiscal policy centered in large part on increased infrastructure spending. While increased infrastructure spending creates short term stimulus for the economy, the long term benefits are more questionable. Recent aggregate growth models have found a significant return to the economy from infrastructure spending but one should view these results with caution.

**Chart 2.6**



Source: World Population Prospects: The 2012 Revision.

A third major issue facing the global economy is the increased risk associated with global growth. Advanced nations have not yet really found their stable growth path since the great recession (2008-2009). Policy makers increasingly worry the global economy will slip into a deflationary state similar to what Japan has experienced over the last twenty years. These fears have increased with the recent protectionist sentiment being expressed. Hence Central Bank monetary policy and fiscal policy making will require increased attention and perhaps the use of innovative strategies.

## Appendix A – Forecast Tables

Canmac uses its proprietary econometric models of the Nova Scotia economy as the basis for predictions. Canmac has three models of the Nova Scotia economy (structural, vector auto regress regression, volatility) it uses to develop its consensus model forecast. The econometric model predictions are often adjusted to reflect latest data and policy changes to provide the final forecast.

Table A1: Nova Scotia Economic Outlook

	2015	2016	2017	2018	2019	2020	2021
Population (000's)	943	950	951	952	953	954	955
Gross Domestic Product (Mill 2007 Chained \$)	36,168.0	36,842.7	37,775.1	38,599.5	39,456.7	40,506.0	41,207.5
Household Consumption (Mill 2007 Chained \$)	25,923.0	26,496.0	27,092.4	27,688.2	28,283.2	28,892.2	29,478.8
Fixed Capital Formation (Mill 2007 Chained \$)	6,702.0	7,058.3	7,413.5	7,706.1	7,955.5	8,249.3	8,361.0
Government Expenditures Goods & Services (Mill \$)	11,433.0	11,551.5	11,762.1	12,013.4	12,293.7	12,620.9	12,926.9
Exports (Millions \$)	13,970.0	14,475.7	14,928.9	15,348.9	15,746.8	16,130.8	16,506.7
GDP Deflator 2007 = 100	111.2	113.7	116.2	118.8	121.5	124.2	127.0
Consumer Price Index (2002 = 100)	129.3	131.2	133.5	136.2	139.0	142.0	145.1
Wage Rate	41,611	43,294	44,175	45,219	46,369	47,655	48,921
Labour Force (000's)	490.2	486.8	492.5	494.9	498.2	506.3	509.8
Employment (000's)	448.1	446.7	459.0	468.4	477.4	487.5	494.0
Unemployment Rate (%)	8.60	8.10	6.80	5.30	4.20	3.70	3.10
Personal Income (Mill 2007 Chained \$)	23,553.0	23,429.0	24,127.4	24,716.4	25,302.3	25,997.0	26,460.1

Source: Canmac Economics Ltd. January 22, 2017 -Econometric Models/Canmac Structural Model

Table A2: Nova Scotia Economic Outlook % Change									
	2015	2016	2017	2018	2019	2020	2021		
Population	0.01	0.65	0.16	0.12	0.09	0.10	0.14		
Gross Domestic Product	0.99	1.87	2.53	2.18	2.22	2.66	1.73		
Household Consumption	1.19	2.21	2.25	2.20	2.15	2.15	2.03		
Fixed Capital Formation	0.83	5.32	5.03	3.95	3.24	3.69	1.35		
Government Expenditures Goods & Services	1.11	1.04	1.82	2.14	2.33	2.66	2.42		
Exports	0.39	3.62	3.13	2.81	2.59	2.44	2.33		
GDP Deflator 2007 = 100	1.37	2.25	2.20	2.24	2.27	2.22	2.25		
Consumer Price Index	0.39	1.47	1.75	2.02	2.06	2.16	2.18		
Wage Rate	2.09	2.09	2.03	2.36	2.54	2.77	2.66		
Labour Force	-0.26	-0.69	1.17	0.49	0.67	1.63	0.69		
Employment	0.11	-0.31	2.75	2.05	1.92	2.12	1.33		
Unemployment Rate	-3.9	-5.81	-16.05	-22.06	-20.75	-11.90	-16.22		
Personal Income	2.14	-0.53	2.98	2.44	2.37	2.75	1.78		
Source: Canmac Economics Ltd. January 22, 2017 -Econometric Models/Canmac Structural Model									