

## Chapter 3: The Relationship between Economic Freedom and Economic Well-Being

A number of studies have linked levels of economic freedom with higher levels of economic growth and income. Easton and Walker (1997) found that changes in economic freedom have a significant impact on the steady-state level of income even after the level of technology, the level of education of the workforce, and the level of investment are taken into account. The results of this study imply that economic freedom is a separate determinant of the level of income. The Fraser Institute's series, *Economic Freedom of the World*, also shows a positive relationship between economic freedom and both the level of per-capita GDP and its growth rate.

De Haan and Sturm (2000) show that positive and negative changes in economic freedom lead to positive and negative changes in economic growth rates. Using the economic freedom index from Gwartney et al. (1996) and per-capita GDP data for 80 countries, their results indicate that after accounting for education level, investment, and population growth, changes in economic freedom have a significant impact on economic growth. The calculation of the index of the economic freedom of North America allows us for the first time to investigate the relationship between economic freedom and prosperity within North America.

To test whether or not there is a positive relationship between economic growth and economic freedom, we use annual observations on each of the variables from 1993 to 2000. We run separate regressions for Canada and the United States to determine if economic freedom has different effects in the two nations. As the data for all US states and all Canadian provinces were used, the study is one of a defined population rather than a random sample of states and provinces, implying that the appropriate estimation technique is the fixed effects, rather than the random effects, model.

Tables 3 and 4 show the regression results of the semi-growth models. Please note that the coefficients

on regressions testing the level of GDP and economic freedom represent US dollars. In the regressions for Canadian provinces, these coefficients are translated into Canadian dollars, using the exchange rate in the year 2000.

Average investment share of GDP is missing from the model because investment data for separate US states is not available.<sup>1</sup> The proxy variable for human capital in our model is not statistically significant. Since the investment variable is missing from the model and the proxy variable for human capital is not significant, the data have to be adjusted. The fixed effects model captures the unobserved or ignorance effects. It does not, however, account for missing relevant variables from a model.

To provide some adjustment for missing relevant variables, the data are transformed into deviations from their national means. In other words, the national mean is subtracted from each of the variables. Although this transformation does not adjust for the omission of the relevant variables completely, to the extent that jurisdictions within a national context are similarly affected by the same economic factors, the transformation—which reveals how each jurisdiction performs in relation to the national average—helps adjust for the impact of the missing relevant variables on other explanatory variables in the model.

The results from the regression analysis in Table 3 indicate that the economic freedom level has a substantial impact on per-capita GDP at a subnational and all-government level. The high school variable is not significant. The reader should also note the relatively small standard errors for the economic freedom variable, both in the regression results reported here and for those reported in the Sensitivity Analysis section, later in this paper. On the whole, the US results are more statistically significant than the Canadian results, though even the Canadian results typically have a *p*-value below 1%, meaning the results, roughly speaking, are statistically significant more than 99 times out

Table 3: Economic Freedom Level and Per-Capita GDP<sup>2</sup>

<i>Regressions at All-Government Level (ALLG)</i>					<i>Regressions at Subnational Level (SUBN)</i>				
Dependent Variable: Per Capita GDP (1993-2000)					Dependent Variable: Per Capita GDP (1993-2000)				
Method: Pooled Least Squares					Method: Pooled Least Squares				
Sample: 1993-2000					Sample: 1993-2000				
<b>Canada</b>					<b>Canada</b>				
Total panel (balanced) observations: 80					Total panel (balanced) observations: 80				
Variable	Coefficient	Std. Error	t-Statistic	Prob.	Variable	Coefficient	Std. Error	t-Statistic	Prob.
HG	3.91	8.69	0.45	0.65	HG	-6.16	8.61	-0.72	0.48
ALLG	2558.11 (C\$3,798.42)	461.20	5.55	0.00	SUBN	1859.36 (C\$2,760.88)	414.01	4.49	0.00
Adjusted R <sup>2</sup> : 0.98					Adjusted R <sup>2</sup> : 0.98				
<b>United States</b>					<b>United States</b>				
Total panel (balanced) observations: 400					Total panel (balanced) observations: 400				
Variable	Coefficient	Std. Error	t-Statistic	Prob.	Variable	Coefficient	Std. Error	t-Statistic	Prob.
HG	-3.46	2.99	-1.16	0.25	HG	-1.10	3.73	-0.29	0.77
ALLG	7185.32	377.59	19.03	0.00	SUBN	3327.68	321.66	10.35	0.00
Adjusted R <sup>2</sup> : 0.98					Adjusted R <sup>2</sup> : 0.97				

**Notes**

HG is the number of high school graduates per 10,000 people (25 years and older) from 1993 to 2000; ALLG is an economic freedom index at an all-government level from 1993 to 2000; SUBN is an economic freedom index at a subnational level from 1993 to 2000.

of 100. Somewhat lower statistical significance on the Canadian tests may reflect both the nature of Canada's fiscal federalism, which mutes the effects of economic freedom, and the fact there are obviously more data points for 50 states than 10 provinces.

At an all-government level, holding other variables constant, an increase of one point in economic freedom in a US state will increase that state's per-capita income by US \$7,185. An increase of one point in economic freedom in a Canadian province will increase its per-capita GDP by US\$2,558 (C\$3,798.42). At a subnational level, an increase of one point in economic freedom in a US state will increase its per-capita GDP by US\$3,328, whereas an increase of one point in economic freedom in a Canadian province will increase its per-capita GDP by US\$1,859 (C\$2,760.88).

For both Canada and the United States, the impact of economic freedom on per-capita GDP is higher at an all-government level than it is at a subnational level. This is the expected result, since the all-government variable captures the impact of restrictions on economic freedom imposed at both the subnational and all-government levels.

While the coefficients may appear quite large, it should be noted that the overall index varies much

less than its individual components, so that a one-point overall increase in economic freedom may not be as easy to achieve as might appear at first notice. The difference in scores between the highest and lowest rated state over the full period is only 2.49 points at the all-government level. Thus a US state would have to improve its score by roughly 40% within this range in order to achieve the one point increase required to realize the \$7,185 per-capita gain in income. In Canada, at the all-government level, the range is 4.07. At the subnational level, the range in Canada is 3.78; in the United States, it is 3.02.

The broader range of variation in Canada may help explain part, though not all, of the differences in the size of the coefficients on economic freedom between the two nations. The coefficient is the number that describes the economic impact of economic freedom. The coefficient on economic freedom at the all-government level is 181% larger for the US states than for Canadian provinces (7185 versus 2558). However, the Canadian range of variation is only 63% greater than the US range of variation (2.49 versus 4.07). Similarly, at the subnational level, the US coefficient is 79% greater than coefficient for Canadian provinces while the range of variation in Canada

is only 25% greater than the US range of variation. Thus, the difference in the range of variation cannot completely explain the difference in the magnitude of the coefficients. As discussed earlier, the structure of Canada's fiscal federalism is the likely explanation for the weaker impact of economic freedom in Canada, particularly at the all-government level.

Table 4 summarizes the results of the regression analysis used to determine the relationship between growth in economic freedom and growth in per-capita GDP at a subnational and all-government level. The main conclusion of the regression analysis results is that growth in economic freedom has a significant impact on the growth in per-capita GDP.

At an all-government level, a one-percent increase in the growth of economic freedom in US states will increase the growth rate of per-capita GDP by 1% whereas a one-percent increase in the growth of economic freedom in a Canadian province will increase growth rate of per-capita GDP by 0.52%. At a subnational level, a one-percent increase in growth in economic freedom in US states will increase growth rate of per-capita GDP by 0.48% whereas a 1% increase

in the growth of the economic freedom in a Canadian province will increase growth rate in per-capita GDP by 0.40%. At a subnational level, growth in economic freedom has the almost the same impact on US states and the Canadian provinces. As noted, the impact of Canada's fiscal federal will be smaller at the subnational than all-government levels. This could be due to the adjustment of the Canadian data at a subnational level (see Appendix D, Adjustment Factors, p. 53). Note that for the US states and the Canadian provinces growth in economic freedom has a larger impact at an all-government level than at a subnational level.

Here again, it is important to consider the range of growth of economic freedom over the period. For Canada, at the all-government level, the range is 22% compared to 10% in the United States. For Canada, at the subnational level, the range is 18% compared to 14% in the United States. This suggests that, at least for economic growth, the differences in the range of variation between Canada and the United States may help explain much of the differing impact of economic freedom. However, since the range of variation itself,

**Table 4: Growth in Economic Freedom and Growth in Per-Capita GDP**

<i>Regressions at All-Government Level (ALLG)</i>					<i>Regressions at Subnational Level (SUBN)</i>				
Dependent Variable: Growth in Per Capita GDP (1994-2000)					Dependent Variable: Growth in Per Capita GDP (1994-2000)				
Method: Pooled Least Squares					Method: Pooled Least Squares				
Sample: 1994-2000					Sample: 1994-2000				
<b>Canada</b>					<b>Canada</b>				
Total panel (balanced) observations: 70					Total panel (balanced) observations: 70				
Variable	Coefficient	Std. Error	t-Statistic	Prob.	Variable	Coefficient	Std. Error	t-Statistic	Prob.
HGG	0.00	0.06	0.07	0.94	HGG	0.04	0.07	0.53	0.60
POPG	0.15	0.78	0.19	0.85	POPG	0.52	0.91	0.57	0.57
ALLGG	0.52	0.10	5.47	0.00	SUBNG	0.40	0.11	3.70	0.00
Adjusted R <sup>2</sup> : 0.35					Adjusted R <sup>2</sup> : 0.21				
<b>United States</b>					<b>United States</b>				
Total panel (balanced) observations: 350					Total panel (balanced) observations: 350				
Variable	Coefficient	Std. Error	t-Statistic	Prob.	Variable	Coefficient	Std. Error	t-Statistic	Prob.
HGG	0.00	0.01	-0.04	0.97	HGG	0.01	0.02	0.54	0.59
POPG	-0.07	0.28	-0.24	0.81	POPG	0.10	0.35	0.28	0.78
ALLGG	1.00	0.06	16.48	0.00	SUBNG	0.48	0.06	8.04	0.00
Adjusted R <sup>2</sup> : 0.51					Adjusted R <sup>2</sup> : 0.24				

### Notes

HGG is growth in the number of high school graduates per 10,000 people (25 years and older) from 1994 to 2000;

POPG is growth in population from 1994 to 2000;

ALLGG is growth in economic freedom at an all-government level from 1994 to 2000;

SUBNG is growth in economic freedom at a subnational level from 1994 to 2000.

obviously, does not determine the size of the coefficient, more research is required here to examine differences between Canada and the United States.

## Sensitivity Analysis

In order to determine the stability of the regression results in the Tables 3 and 4, further testing was done using moving averages rather than annual data. These results can be found below. Further sensitivity analysis, including tests using Canadian dollars and tests using different income tax calculations, can be found on [www.freetheworld.com](http://www.freetheworld.com).

The use of moving averages (reported in Tables 5 and 6) is important. Annual data in regression analysis may lead to misleading results because, depending on the period of study, business cycles may inflate or deflate the estimated coefficients. The data used in the regression analyses in Tables 5 and 6 are smoothed out through use of a moving average, minimizing the impact of business cycles. The variables are the same as before. Significance levels remain high except for some of the longer moving averages for Canadian data. The results are interesting in themselves in that they throw further light on the impact of fiscal federalism and the impact of economic freedom over time.

### Levels

The regression results in Table 5 indicate that the level of economic freedom has a strong impact on per-capita GDP regardless of period used for calculating the moving averages. The significance of the coefficient stays high, regardless of the number of periods in the moving average, at both subnational and all-government levels. The results are also consistent with the earlier finding that the level of economic freedom has a stronger impact on US states than on the Canadian provinces.

For US states, the longer the time period covered by the moving average, the greater the impact of economic freedom. This is likely because the impact of economic freedom is not instantaneous and, therefore, within reasonable limits the longer the period under consideration, the greater the impact of economic freedom.<sup>3</sup> As well, gains in economic growth, like savings, compound over time and, thus, longer time periods show larger effects.

Yet, this pattern—a positive correlation between the coefficient on economic freedom and the length of time over which it is calculated—is exactly reversed for the Canadian data at both the all-government level and subnational levels. This strongly suggests that fiscal federalism, by transferring funds from provinces that have a high degree of economic freedom to those with less economic freedom and effectively increasing the tax burden in freer provinces, mutes the effect of economic freedom over time. In other words, fiscal federalism not only imposes an immediate penalty upon relatively free provinces in comparison with US states, but a penalty that becomes greater over time. Thus, economic freedom has a weaker impact in Canada than in the United States and the gap grows over time.

Finally, the pattern differentiating all-government testing from subnational testing remains consistent regardless of period. For both Canada and the United States, the impact of economic freedom at the all-government level is greater than the impact at the subnational level regardless of time period.

### Growth

The regression results in Table 6 indicate that the estimated coefficients on the growth in economic freedom using moving average data are very similar to the regression results using annual data.

The coefficient on economic freedom in US testing appears to have a slight upward tendency but not as pronounced as in the tests on levels. This is to be expected since the compounding effects of economic freedom will affect only levels and not growth rates, just as compounding of interest affects only the sum being saved and not the interest rate, itself. For Canada, there is no clear relationship between the size of the coefficient and the length of the moving average.

Additional sensitivity tests were run using data back to 1981 using four-year time periods. In other words, data for 1981, 1985, 1989, 1993 and 1997 were used. Here again the results in Tables 7 and 8 are consistent with what has already been found.

For the US states in particular, all the results—all-government and subnational—are highly similar to both the results reported in the main body of the text and with the rolling average testing and consistent with the idea that economic freedom has a greater impact the longer the time period under consideration. This is true, with the provisos noted above about compounding, for both the growth and the level regressions.

**Table 5: Level of Economic Freedom and Per-Capita GDP: Moving Averages**

Dependent Variable: Real Per Capita GDP (1993-2000)

Method: Pooled Least Squares

	2-period backward moving average		3-period backward moving average		4-period backward moving average		5-period backward moving average	
<b>Canada at an All-Government Level</b>								
Total panel (balanced) observations:	70		60		50		40	
Variable	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic
HG	2.89	0.38	0.69	0.08	0.23	0.02	-2.57	-0.18
ALLG	2372.70	5.76	2243.23	5.09	2070.46	3.56	1894.18	2.38
	Adjusted R <sup>2</sup> : 0.99		Adjusted R <sup>2</sup> : 0.99		Adjusted R <sup>2</sup> : 1.00		Adjusted R <sup>2</sup> : 1.00	
<b>Canada at a Subnational Level</b>								
Total panel (balanced) observations:	70		60		50		40	
Variable	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic
HG	-7.21	-0.99	-9.59	-1.27	-10.46	-1.17	-15.53	-1.35
SUBN	1786.46	4.99	1678.96	4.80	1521.59	3.57	1334.20	2.30
	Adjusted R <sup>2</sup> : 0.99		Adjusted R <sup>2</sup> : 0.99		Adjusted R <sup>2</sup> : 1.00		Adjusted R <sup>2</sup> : 1.00	
<b>United States at an All-Government Level</b>								
Total panel (balanced) observations:	350		300		250		200	
Variable	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic
HG	-2.64	-0.74	-3.58	-0.79	-3.32	-0.64	-3.78	-0.67
ALLG	7493.55	18.79	7701.84	17.62	7732.11	15.33	7926.67	13.14
	Adjusted R <sup>2</sup> : 0.99		Adjusted R <sup>2</sup> : 0.99		Adjusted R <sup>2</sup> : 0.99		Adjusted R <sup>2</sup> : 1.00	
<b>United States at a Subnational Level</b>								
Total panel (balanced) observations:	350		300		250		200	
Variable	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic
HG	-0.94	-0.20	-2.31	-0.39	-2.37	-0.36	-1.99	-0.28
SUBN	3450.49	9.98	3513.94	9.28	3491.28	8.19	3531.99	6.93
	Adjusted R <sup>2</sup> : 0.98		Adjusted R <sup>2</sup> : 0.99		Adjusted R <sup>2</sup> : 0.99		Adjusted R <sup>2</sup> : 0.99	

**Notes**

HG is the number of high school graduates per 10,000 people (25 years and older) from 1993 to 2000;

ALLG is an economic freedom index at an all-government level from 1993 to 2000;

SUBN is an economic freedom index at a subnational level from 1993 to 2000.

**Table 6: Growth in Economic Freedom and Growth in Per-Capita GDP: Moving Averages**

Dependent Variable: Growth in Per Capita GDP (1994-2000)

Method: Pooled Least Squares

	2-period backward moving average		3-period backward moving average		4-period backward moving average		5-period backward moving average	
<b>Canada at an All-Government Level</b>								
Total panel (balanced) observations:	60		50		40		30	
HGG	0.01	0.14	0.02	0.31	0.03	0.43	0.05	0.35
POPG	1.13	1.88	1.42	2.88	1.81	3.30	2.27	2.17
ALLGG	0.62	7.23	0.64	8.05	0.68	6.38	0.47	1.71
	Adjusted R <sup>2</sup> : 0.54		Adjusted R <sup>2</sup> : 0.68		Adjusted R <sup>2</sup> : 0.72		Adjusted R <sup>2</sup> : 0.65	
<b>Canada at a Subnational Level</b>								
Total panel (balanced) observations:	60		50		40		30	
HGG	0.02	0.21	0.02	0.27	-0.05	-0.65	-0.03	-0.25
POPG	1.55	2.16	1.93	3.58	2.11	3.72	1.85	1.77
SUBNG	0.55	5.24	0.61	7.35	0.57	6.29	0.20	1.05
	Adjusted R <sup>2</sup> : 0.39		Adjusted R <sup>2</sup> : 0.64		Adjusted R <sup>2</sup> : 0.72		Adjusted R <sup>2</sup> : 0.61	
<b>United States at an All-Government Level</b>								
Total panel (balanced) observations:	300		250		200		150	
HGG	0.01	0.96	0.01	0.47	0.01	0.93	0.01	0.67
POPG	-0.02	-0.10	0.08	0.42	0.01	0.03	0.04	0.14
ALLGG	1.06	18.00	1.09	17.29	1.07	13.83	1.13	9.41
	Adjusted R <sup>2</sup> : 0.70		Adjusted R <sup>2</sup> : 0.81		Adjusted R <sup>2</sup> : 0.87		Adjusted R <sup>2</sup> : 0.91	
<b>United States at a Subnational Level</b>								
Total panel (balanced) observations:	300		250		200		150	
HGG	0.02	1.08	0.01	0.64	0.01	0.72	0.02	0.81
POPG	0.01	0.02	0.23	0.90	0.17	0.62	0.15	0.43
SUBNG	0.52	9.34	0.58	9.24	0.56	7.33	0.47	5.18
	Adjusted R <sup>2</sup> : 0.48		Adjusted R <sup>2</sup> : 0.67		Adjusted R <sup>2</sup> : 0.79		Adjusted R <sup>2</sup> : 0.86	

**Notes**

HGG is growth in the number of high school graduates per 10,000 people (25 years and older) from 1994 to 2000;

POPG is growth in population from 1994 to 2000;

ALLGG is growth in economic freedom at an all-government level from 1994 to 2000;

SUBNG is growth in economic freedom at a subnational level from 1994 to 2000.

**Table 7: Level of Economic Freedom and Per-Capita GDP—Four-Year Periods**

Regressions at All-Government Level					Regressions at Subnational Level				
Dependent Variable: Real Per Capita GDP					Dependent Variable: Real Per Capita GDP				
Method: Pooled Least Squares					Method: Pooled Least Squares				
Sample: 1981, 1985, 1989, 1993, 1997					Sample: 1981, 1985, 1989, 1993, 1997				
<b>Canada</b>									
Total panel (balanced) observations: 50					Total panel (balanced) observations: 50				
Variable	Coefficient	Std. Error	t-Statistic	Prob.	Variable	Coefficient	Std. Error	t-Statistic	Prob.
HG	-14.65	19.96	-0.73	0.47	HG	-14.69	20.36	-0.72	0.48
ALLG	1335.48	527.15	2.53	0.02	SUBN	1461.78	666.16	2.19	0.03
Adjusted R <sup>2</sup> : 0.90					Adjusted R <sup>2</sup> : 0.90				
<b>United States</b>									
Total panel (balanced) observations: 250					Total panel (balanced) observations: 250				
Variable	Coefficient	Std. Error	t-Statistic	Prob.	Variable	Coefficient	Std. Error	t-Statistic	Prob.
HG	-28.11	13.16	-2.14	0.03	HG	-33.47	14.64	-2.29	0.02
ALLG	9659.43	672.63	14.36	0.00	SUBN	7242.05	641.76	11.28	0.00
Adjusted R <sup>2</sup> : 0.88					Adjusted R <sup>2</sup> : 0.85				

**Notes**

HG is the number of high school graduates per 10,000 people (25 years and older);

ALLG is an economic freedom index at an all-government level;

SUBN is an economic freedom index at a subnational level.

**Table 8: Growth in Economic Freedom and Growth in Per-Capita GDP—Four-Year Periods**

Regressions at All-Government Level					Regressions at Subnational Level				
Dependent Variable: Growth in Per Capita GDP					Dependent Variable: Growth in Per Capita GDP				
Method: Pooled Least Squares					Method: Pooled Least Squares				
Sample: 1985, 1989, 1993, 1997					Sample: 1985, 1989, 1993, 1997				
<b>Canada</b>									
Total panel (balanced) observations: 40					Total panel (balanced) observations: 40				
Variable	Coefficient	Std. Error	t-Statistic	Prob.	Variable	Coefficient	Std. Error	t-Statistic	Prob.
HGG	0.13	0.14	0.91	0.37	HGG	0.33	0.15	2.17	0.05
POPG	1.45	0.77	1.88	0.07	POPG	1.60	0.78	2.07	0.00
ALLGG	0.36	0.09	4.10	0.00	SUBNG	0.72	0.17	4.10	0.00
Adjusted R <sup>2</sup> : 0.32					Adjusted R <sup>2</sup> : 0.32				
<b>United States</b>									
Total panel (balanced) observations: 200					Total panel (balanced) observations: 200				
Variable	Coefficient	Std. Error	t-Statistic	Prob.	Variable	Coefficient	Std. Error	t-Statistic	Prob.
HGG	0.08	0.05	1.62	0.11	HGG	0.16	0.05	3.12	0.01
POPG	0.18	0.16	1.11	0.27	POPG	0.46	0.17	2.80	0.00
ALLGG	1.00	0.08	12.05	0.00	SUBNG	0.72	0.07	10.51	0.00
Adjusted R <sup>2</sup> : 0.67					Adjusted R <sup>2</sup> : 0.63				

**Notes**

HGG is growth in the number of high school graduates per 10,000 people (25 years and older);

POPG is growth in population;

ALLGG is growth in economic freedom at an all-government level;

SUBNG is growth in economic freedom at a subnational level.

The Canadian results are also consistent with earlier results and with comments about fiscal federalism. In particular, the coefficient on economic freedom again seems typically to be reduced by longer time periods, for both levels and growth rates. The coefficient on growth in economic freedom in the subnational regression is larger in Table 8, using four-year periods, than in Table 4, using annual data, suggesting the need for further investigation. It may simply be, as noted above, that the muting effects of fiscal federalism are smaller at the subnational level than at the all-government level, allowing the advantages of economic freedom over time to be more apparent in subnational testing.

## The Importance of Economic Freedom

This paper has focused on the measurement of economic freedom and on empirical testing of the impact of economic freedom. However, the reader may wonder why economic freedom is so clearly related to growth and prosperity, a finding not just of this paper but also of many other empirical explorations of economic freedom.

In many ways, this debate goes back to the beginnings of modern economics when Adam Smith famously argued that each of us, freely pursuing our own ends, create the wealth of nations and of the individual citizens. However, the twentieth century was much consumed by a debate about whether planned or free economies produce the best outcomes. The results of the experiments of the twentieth century should be clear. Free economies produced the greatest prosperity in human history for their citizens. Even poverty in these economically free nations would have been considered luxury in unfree economies. This lesson was reinforced by the collapse of centrally planned states and, following this, the consistent refusal of their citizens to return to central planning, regardless of the hardships on the road to freedom. Among developing nations, those that adopted the centrally planned model have only produced lives of misery for their citizens. Those that adopted the economics of competitive markets have begun to share with their citizens the prosperity of advanced market economies.

While these comparisons are extreme examples, from opposite ends of the economic freedom spectrum, a considerable body of research shows the relationship between prosperity and economic freedom holds in narrower ranges of the spectrum. While sophisticated econometric testing backs up this relationship, examples are also interesting. So, for example taking two peripheral European nations, the relatively free Ireland does much better than the relatively unfree Greece. In the United States, the relatively free Georgia does much better than the relatively unfree West Virginia. In Canada, an unfree Quebec does much worse than its freer neighbour, Ontario. As with anything in the real world, exceptions can be found, but overall the strength of the statistical fit of this relationship is remarkable.

While this is hardly the place to review several centuries of economic debate, the mechanics of economic freedom are easy to understand. Any transaction freely entered into must benefit both parties. Any transaction, which does not benefit both parties, would be rejected by the party that would come up short. This has consequences throughout the economy. Consumers who are free to choose will only be attracted by superior quality and price. A producer must constantly improve its price and quality to meet customer demands or customers will not freely enter into transactions with the producer. Many billions of mutually beneficial transactions occur every day, powering the dynamic that spurs increased productivity and wealth throughout the economy.

Restrictions on freedom prevent people from making mutually beneficial transactions. Such free transactions are replaced by government action. This is marked by coercion, in collecting taxes, and lack of choice, in accepting services. Instead of gains for both parties arising from each transaction, citizens must pay whatever bill is demanded in taxes and accept whatever service is offered in return. Moreover, while the incentives of producers in a free market revolve around providing superior goods and services in order to attract consumers, the public sector faces no such incentives. Instead, as public-choice theory reveals, incentives in the public sector often focus on rewarding interest groups, seeking political advantage, or even penalizing unpopular groups. This is far different from mutually beneficial exchange although, as noted earlier, government does have essential protective and productive functions.

In some ways it is surprising the debate still rages because the evidence and theory favouring economic freedom match intuition. Intuitively it makes sense that the drive and ingenuity of all citizens, harnessed to better outcomes through the mechanism of mutually beneficial exchange, will surely do better for themselves than will a small coterie of government planners, who hardly have knowledge of everyone's values and who, being human, are likely to consider their own well-being and the constituencies they must please when making decisions for all of us.

## Conclusion

The worldwide evidence on economic freedom suggests that the Canadian provinces are poorly positioned to take advantage of economic opportunity. The provinces are clustered near the bottom of the rankings in all three areas, indicating that their governments have consumed and transferred more resources, imposed higher tax rates, and created more rigid labor markets than the governments of US states.

The regression analyses indicate that growth in economic freedom and the level of economic freedom have a significant impact on the growth in per-capita GDP and the level of per-capita GDP. Since Canadian provinces have relatively low levels of economic freedom, Canadians are likely to continue to experience lower standards of living relative to American states. Only two provinces, Alberta and Ontario, have high levels of economic freedom in the Canadian context, and their residents have seen the benefits of this.

## Notes

- 1 As already mentioned, the omission of the investment variable does not seriously affect the coefficients on economic freedom. We tested the impact of the exclusion of the investment variable from the model of Mankiw, Romer, and Weil (1992), enhanced by an economic freedom variable. The exclusion does not change the estimated coefficients on economic freedom nor their standard errors significantly.
- 2 Stability testing reveals that regression results in Tables 3 and 4 are not sensitive to the method of estimation or to the model specification. The results change little when random effects are used to estimate the coefficients or when the high-school variable (our proxy for human capital) or the population-growth variable is excluded from the model. Note that the covariance matrix of the estimated standard errors is virtually identical to the heteroscedasticity consistent White matrix. Exclusion of the outliers, Alberta and Alaska, from Table 3 and Newfoundland, Alberta, British Columbia, Alaska, and Hawaii from Table 4 does not change the estimated coefficients on economic freedom or their standard errors significantly.
- 3 The qualification "reasonable limits" is included since, over too long a period, increases and decreases in economic freedom would tend to cancel out, at least partly, in individual jurisdictions, reducing the measured impact.