

Auto Insurance Market Quality Index, 2010: Comparison of North American Auto Insurance Markets

By Brett J. Skinner and Mark Rovere

Main Conclusions

Market quality and regulation

- Among the 60 jurisdictions analyzed over the years 2003, 2004, and 2005, the Canadian provinces as a group had a higher regulatory burden or more government control over auto insurance and ranked relatively poorly on market quality in all three years studied.

Public monopoly/government-run auto insurance

- Of the 60 jurisdictions studied, only four have public monopoly or government-run auto insurance systems. These four are the Canadian provinces of British Columbia, Saskatchewan, Manitoba, and Quebec.
- The data show that public monopoly or government-run auto insurance systems consistently produce the worst outcomes for consumers.

This study aims to explain the link between the regulation of auto insurance markets and the effect of this regulation on consumers, and to help identify public policies that are most likely to produce superior results.



Brett J. Skinner, PhD., is President of the Fraser Institute and the Institute's Director of Insurance Policy Research.



Mark Rovere is Associate Director of Health Policy Research at the Fraser Institute.

Executive summary

This study is the second analysis by the Fraser Institute that measures and compares the performance of auto insurance markets across North American jurisdictions. The 2010 edition of this study replicates the method previously used by Skinner (2006), and assesses the performance of automobile insurance markets in 10 Canadian provinces and 50 American states for the years 2003, 2004, and 2005—the most recent year for which complete data were available across all jurisdictions.

Data were collected on 13 variables describing the regulatory policy environments. The results were compared for each jurisdiction.¹ From these 13 variables, five indices were constructed that compare market quality and regulatory severity across North America. Two indices measure market quality from the perspective of consumers regarding cost and choice; one index gauges market quality from the perspective of insurers regarding the business climate for auto insurance; a fourth index measures the regulatory strictness of auto insurance policy in each market; and the fifth index combines the scores for each jurisdiction across all 13 variables to measure overall market quality.

Introduction

Insurance was initially created as a cooperative free market response to provide financial protection against the risk of suffering large and unexpected economic losses. However, the economics of insurance is complicated and thus

misunderstandings and misguided criticisms of market failure often arise. Governments in many countries, including Canada, have also attached social goals to insurance that have been used to justify either heavy regulation or the government takeover of this industry.

The purpose of this study is to measure differences in auto insurance regulations across North America and the implications of those regulations for consumers. The study also aims to identify the public policies that will minimize the costs of auto insurance regulation and maximize consumer benefits.

Data

Auto insurance is regulated at the sub-national level in both Canada and the United States. Therefore, comparisons can be made at the provincial and state levels in these countries. The data for this study cover 10 Canadian provinces and 50 American states for the calendar years 2003, 2004, and 2005. The data cover personal passenger automobile insurance only, excluding commercial, recreational, or other vehicle insurance. All insurers (public and private) are included for each jurisdiction. Following an accrual accounting principle, all premium data are defined as earned within the years 2003, 2004, and 2005. Claims data are defined as incurred within those same years and count all coverage, including the regular and residual markets² where applicable. In order to control for the effects of purchasing power variation between national currencies and local price differences for the factors determining automobile insurance costs, all

monetary data are in current figures in local currency (US and Canadian dollars) and they are stated either as a percentage of local gross domestic product (GDP, or GSP in the US) or aggregate personal disposable income (PDI) for each individual market, or stated as a ratio of two variables, such as claims-to-premiums.

Canadian data for the four public sector automobile insurers were taken directly from the annual reports of the Insurance Corporation of British Columbia (ICBC, 2005; 2006; 2007); Saskatchewan Government Insurance (SGI, 2005; 2006; 2007); Manitoba Public Insurance (MPI, 2005; 2006; 2007); and Société de l'assurance automobile du Québec (SAAQ, 2005, 2006, 2007). Canadian data for all private sector insurers were obtained from the Insurance Bureau of Canada (IBC, 2004; 2005; 2006; 2007). IBC is the industry association representing nearly 90 percent of private sector property and casualty insurers operating in Canada. IBC supplies data to the General Insurance Statistical Agency (GISA), which is the official statistical agency for federal and provincial insurance regulators. IBC data include the entire market for automobile insurance in the six provinces where auto insurance comes totally from the private sector (Newfoundland and Labrador, Prince Edward Island, Nova Scotia, New Brunswick, Ontario, and Alberta). In British Columbia, Saskatchewan, Manitoba, and Quebec, the provincial governments operate a public monopoly over a basic auto insurance product in which the scope of coverage is defined by provincial law. Private sector insurers are permitted to offer coverage for automobile

insurance only in the optional markets in these provinces. Data from all private sector insurers operating in the optional markets in the four provinces with public sector insurance providers were taken from MSA Research Inc. (MSA, 2008, Special data request, courtesy of Joel Baker and Laura Viau). General economic data were obtained from Statistics Canada. American data were found primarily from the US National Association of Insurance Commissioners' 2005–2006 Auto Insurance Database Report (NAIC, 2008), which provides detailed, standardized data on auto insurance for each of the 50 American states included in this study. The District of Columbia (DC) is excluded even though the NAIC does make separate data available. The NAIC also provided data on the premium tax rates for all 50 states. The NAIC is the association that represents American state insurance regulators. General economic data were obtained from the US Bureau of Economic Analysis (BEA). The previous edition of this report included insurance data from the United Kingdom. However, the UK was excluded from this edition.

Methodology

The study uses the same methodology as the 2006 edition (Skinner, 2006).

Description of variable measures

The description and rationale for each of the 13 variables used to construct the indices in this study is explained below. Each variable appears in alphabetical order.

Affordability: an interval measure³ of aggregate earned premiums in

each market stated as a percentage of aggregate Personal Disposable Income (PDI) or the income after taxes available to consumers as a whole. This measure takes into account the relative affordability of premium costs relative to the actual income that consumers have available to them in each market after taxes. For instance, auto insurance premium prices might be roughly equivalent across some jurisdictions, but consumers in a high tax jurisdiction might have fewer available dollars with which to pay those premiums, and therefore, the price is in effect much higher for consumers in the high tax jurisdiction. A measure of affordability is one meaningful way for consumers to compare the costs of auto insurance between jurisdictions.

Comparative cost: an interval measure of aggregate earned premiums in each market stated as a percentage of the size of the jurisdiction's economy or local Gross Domestic Product (GDP). This cost measure allows for comparisons across jurisdictions despite differences in prices. Those differences are related to local income conditions, to differences in the purchasing power of currencies between jurisdictions, or to changes in the purchasing power of currencies across time.

Competition barriers: an interval measure of the percentage of the market that is subject to a regulatory prohibition on competition or artificial barriers to competition in the provision of auto insurance. In order to appropriately gauge the level of competition between auto insurers in a market, a measure of contestability is required.⁴ Four Canadian provinces, Quebec,

Saskatchewan, British Columbia, and Manitoba, maintain public auto insurance monopolies that prohibit competition for basic automobile insurance (such as liability and injury insurance), but allow competition for the optional market (such as auto property damage). This study uses the percentage of the market that is affected by prohibitions on competition or artificial barriers to competition as a measure of actual contestability.

Compulsory accident benefits: binary variable indicating the presence (= 1) or absence (= 0) of regulations requiring insurers to provide pre-defined personal injury, medical, death, disability, and income replacement benefits.

Compulsory insurance coverage for uninsured or underinsured motorists: binary variable indicating the presence (= 1) or absence (= 0) of regulations requiring drivers to have insurance coverage in the event of an accident with an uninsured or underinsured driver.

Compulsory liability insurance: binary variable indicating the presence (= 1) or absence (= 0) of regulations requiring drivers to have insurance coverage for general liability related to a motor vehicle accident.

Legal regulation: ordinal variable⁵ indicating the kind of legal system prescribed by regulation to specifically govern the assignment of liability or fault related to a motor vehicle accident. For this variable an ordinal value was assigned depending on the severity of the restriction on normal tort rights in each jurisdiction (see table 1). The scale goes

from 1 (least restrictive) to 6 (most restrictive).

Minimum coverage for accident benefits: an interval variable of the minimum insurance coverage drivers are required to purchase for accident benefits unrelated to property damage or liability (in dollars).⁶ In this study, the variable is considered to be a minimum requirement restriction on consumer rights to choose the coverage level they wish to buy. This is because higher minimum accident benefits levels require higher premiums to cover the expected costs. Therefore, this regulation limits the freedom of consumers to choose lower coverage levels that might reduce their overall premium costs. Higher minimum benefit levels under this regulation are therefore defined as a negative value from a consumer choice perspective. For the purpose of this study, minimum coverage for accident benefits includes the amount of mandatory compensation required for medical payments, funeral expenses, disability benefits, and death benefits.

Minimum coverage for bodily injury liability: an interval variable of the minimum insurance coverage required by law (in dollars).

Minimum coverage for property damage liability: an interval variable of the minimum insurance coverage required by law (in dollars).

Pricing sustainability/profitability: an interval measure of aggregate incurred claims as a percentage of aggregate earned premiums within each jurisdiction. The core statistic is stated as a decimal. When the value exceeds 1 (or 100 percent), it

means that claims costs exceed premium revenue, thus creating an unsustainable, insolvent financial position. As far as consumers are concerned, this statistic indicates the probability that a market can sustain its observed premium rates over time without relying on non-premium income. This measure is also known as a “loss ratio” and is used by the insurance industry to measure the balance of claims versus premiums before returns on invested earnings. In other words, it measures the financial adequacy of a company’s insurance underwriting. However, insurance works by collecting enough premium revenue to cover the insured population’s expected losses from insured events. Insurers are supposed to be building up surpluses to create pools of earned capital that will be sufficient to cover those losses. Therefore, it is important to note that the actual net profits earned

by insurers are less than indicated by the “loss ratio.” Furthermore, economic theory suggests that in highly competitive markets, profits should be smaller per firm than they are in less competitive markets because prices are reduced in order to attract customers. Highly competitive markets should therefore be characterized by narrower loss ratios. However, this does not necessarily imply a lack of sustainability. This variable should be interpreted with caution as a measure of the relative degree to which each market has the capacity to sustain current premiums, but not of absolute sustainability. Absolute sustainability would be threatened only when loss ratios (including competitive profits) exceed 1 (or 100 percent).

Rate filing regulation: ordinal measure of the type of rate filing regulations employed in the

Table 1: Assignment of Auto Insurance Legal Regulation Severity Values

Types of Legal Regulations for Auto Insurance	Description	Assigned Regulatory Severity Value
Tort	An accident victim can sue the at-fault driver for all kinds of damages with no restrictions	1
Add-On	Tort rights extended to non-economic damages only after a threshold is reached	2
Modified Tort and No-Fault	No fault with a verbal descriptive threshold or the insured has a choice over whether to retain tort rights	3
No Fault (a)	\$0 - \$2,500 tort threshold	4
No Fault (b)	\$2,500 - \$5,000 tort threshold	5
No Fault (c)	No tort rights	6

Source: NAIC, 2008.

Table 2: Assignment of Auto Insurance Rate Filing Regulation Severity Values

Types of Rate Filing Regulations	Description	Assigned Regulatory Severity Value
No File	Rates are not required to be filed with or approved by the jurisdiction’s regulator. However, the company must maintain records of rating experience and information used in developing the rates. The company must make these available to the jurisdiction’s regulator upon request.	1
Use and File	Rates must be filed with the regulator within a specified period after use.	2
File and Use	Rates must be filed with the jurisdiction’s regulator prior to their use. Specific approval is not required, but the regulator retains the right of subsequent disapproval.	3
Flex Rating	Prior approval of rates required only if exceeding a percentage above the previously filed rates.	4
Modified Prior Approval	Rate revisions involving changes in expense ratios or rate relativity require prior approval. Rate revisions based only on rating experience are subject to “file and use” laws.	5
Prior Approval*	Rates must be filed with and approved by the jurisdiction’s regulator before use. A deemer provision can be used to indicate approval, i.e., rates are not denied within specified days.	6

*In some jurisdictions, rates are determined by the Commissioner of Insurance. However, this is conceptually not that different from “Prior Approval” regulations and so any jurisdiction characterized as having a “Determined by Commissioner” rate-filing regulatory model is included under “Prior Approval.”

Source: Description based on NAIC, 2008.

jurisdiction. Rate filing laws are a form of rate regulation or price control used by regulators. The various kinds of rate filing laws are outlined in table 2. For this variable, an ordinal value was assigned depending on the regulatory severity of the rate-filing regime in each jurisdiction. The value scale goes from 1 (least restrictive) to 6 (most restrictive).⁷

Special tax burden: an interval variable of the tax rate applied specifically to auto insurance premiums (as a percentage). The auto insurance industry is heavily taxed. In the average Canadian

jurisdiction with a private market, the tax burden is almost three times that borne by other financial services industries (Chen and Mintz, 2001). Consumers ultimately pay this disproportionate tax through higher premiums and therefore the extra tax burden adds to the cost of auto insurance.

Scoring system

In order to create a combined score within each of the four indices (i.e., Cost and Pricing Fairness, Insurance Choice, Business Climate, and Regulatory Severity), a standardized score was calculated on a scale of 0

to 10 for each jurisdiction for each of the variables. Standardized scores make comparisons of performance across dissimilar variables comparable by proportionally converting the values to the same scale of measurement. An average of the standardized scores was calculated to produce an overall score in each index. Depending on whether higher raw values are indicative of better or worse performance, alternative formulas are used to calculate a standardized score on a 0 to 10 scale.

When higher raw values are indicative of better performance, the formula is:

$$10 \left[\frac{(V_i - V_{\min})}{(V_{\max} - V_{\min})} \right]$$

(Formula A)

When higher values denote worse performance, the formula is:

$$10 \left[\frac{(V_{\max} - V_i)}{(V_{\max} - V_{\min})} \right]$$

(Formula B)

where V_i is the jurisdiction's raw value for the indicator; V_{\max} is the maximum value among all of the jurisdictions; and V_{\min} is the minimum value among all jurisdictions.⁸

Formula B was used to convert the raw values to standardized scores for all variables in this study. This means that for the variables used to create the indices, higher raw values denote worse market quality, so Formula B converts these high raw values to low standardized scores. Thus, higher scores denote better market quality outcomes. For the final standardized scores used in this study, 0 equals "worst" and 10 equals "best."

Study design

Indices

This paper assesses the performance of automobile insurance markets in 10 Canadian provinces and 50 American states for 2003, 2004, and 2005—the most recent year for which complete data were available. Data were collected on 13 variables describing the regulatory policy environments and outcomes in each jurisdiction using comparable units of measure. From these 13 variables, five indices were constructed that comparatively measure market quality and regulatory severity across international jurisdictions.

Two indices measure market quality in terms of cost and choice, critical factors from a consumer's perspective; one index gauges the business climate for auto insurance, of key importance to insurers; a fourth index measures the regulatory severity of auto insurance policy in each market; and the fifth combines the scores for each jurisdiction across all 13 variables to measure overall market quality (see tables 3 to 7). Some of the 13 variables appear in more than one index because it is conceptually impossible to assign some of them exclusively to one index. For example, variables measuring the presence of regulatory prohibitions on competition are simultaneously measures of both choice and regulatory severity. Similarly, the product regulation variables used in this study serve equally well as measures of consumer choice over the scope and type of insurance coverage. Therefore, in generating the Overall Market Quality Index (MQI) (table 7), the scores are not combined across each of the sub-indices (tables 3 through 6) because this would count some variables multiple times

and thus skew the results. Instead, the MQI is constructed simply as a combined score of the 13 variable measures.

Findings

This section first describes and explains the rankings within each of the four sub-indices introduced in this study. The combined jurisdictional scores across all variables and the rankings within the Overall Market Quality Index (MQI) follow.

Cost and Pricing Fairness Index (CPFI)

The Cost and Pricing Fairness Index (CPFI) is made up of five variables. The first measures the comparative costs of auto insurance premiums across jurisdictions controlling for variation in incomes and prices. The second measures the affordability of auto insurance premiums for consumers, further controlling for differences in disposable income. The third variable measures the sustainability of premium prices in order to give

Table 3: Auto Insurance Cost and Pricing Fairness Index (CPFI) Variables

Variable Labels	Unit of Measure
Comparative Cost	1. Premiums as a Percentage of Local Gross Domestic Product (GDP)
Affordability	2. Premiums as a Percentage of Personal Disposable Income (PDI)
Sustainability	3. Claims as a Percentage of Premiums
Fairness	4. Regulatory Restrictions on Legal Rights to Assign Fault in a Motor Vehicle Collision
Extra Tax Burden	5. Special Taxes Applied to Premiums

Table 4: Auto Insurance Choice Index (CI) Variables

Variable Labels	Unit of Measure
Choice to Purchase	1. Compulsory Liability Insurance Laws 2. Compulsory Accident Benefits Laws 3. Compulsory Uninsured Motorist Coverage Laws
Choice of Coverage	4. Minimum Property Damage Liability Coverage Regulations 5. Minimum Bodily Injury Liability Coverage Regulations 6. Minimum Accident Benefits Coverage Regulations
Choice of Insurer	7. Regulatory Prohibitions or Restrictions on Competition Between Insurers

Table 5: Auto Insurance Business Climate Index (BCI) Variables

Variable Labels	Unit of Measure
Profitability	1. Claims as a Percentage of Premiums
Competition Barriers	2. Regulatory Prohibitions or Restrictions on Competition between Insurers
Product Regulation	3. Minimum Property Damage Liability Coverage Regulations 4. Minimum Bodily Injury Liability Coverage Regulations 5. Minimum Accident Benefits Coverage Regulations
Pricing Restrictions	6. Rate Filing Restrictions

Table 6: Regulatory Severity Index (RSI) Variables

Variable Labels	Unit of Measure
Competition Barriers	1. Regulatory Prohibitions or Restrictions on Competition between Insurers
Pricing Regulation	2. Rate Filing Restrictions
Coverage Mandates	3. Compulsory Liability Insurance Laws 4. Compulsory Accident Benefits Laws 5. Compulsory Uninsured Motorist Coverage Laws
Product Regulation	6. Minimum Property Damage Liability Coverage Regulations 7. Minimum Bodily Injury Liability Coverage Regulations 8. Minimum Accident Benefits Coverage Regulations
Legal Restrictions	9. Regulatory Restrictions on Legal Rights to Assign Fault in a Motor Vehicle Collision

Table 7: Overall Market Quality Index (MQI) Variables

Sub-Variables

1. Regulatory Prohibitions or Restrictions on Competition between Insurers
2. Rate Filing Restrictions
3. Compulsory Liability Insurance Laws
4. Compulsory Accident Benefits Laws
5. Compulsory Uninsured Motorist Coverage Laws
6. Minimum Property Damage Liability Coverage Regulations
7. Minimum Bodily Injury Liability Coverage Regulations
8. Minimum Accident Benefits Coverage Regulations
9. Regulatory Restrictions on Legal Rights to Assign Fault in a Motor Vehicle Collision
10. Premiums as a Percentage of Local Gross Domestic Product (GDP)
11. Premiums as a Percentage of Personal Disposable Income (PDI)
12. Claims as a Percentage of Premiums
13. Special Taxes Applied to Premiums

consumers an idea of future prices. The fourth variable measures the degree of fairness in the pricing of auto insurance premiums. It is calculated by measuring restrictions on the legal rights of drivers to assign fault in an accident. When drivers are not allowed to legally assign fault in an accident, they end up paying higher premiums to cover the risk represented by other drivers who might cause an accident with them. The final variable measures the level of premium tax that is applied to auto insurance as these taxes contribute to the cost of auto insurance.

Figures 1 through 3 display the relative ranks of each of the 60 jurisdictions studied (by year) on the Cost and Pricing Fairness Index.

The top 10 best performing jurisdictions in the Cost and Pricing

Fairness Indices in 2003, 2004, and 2005 are all American states. The poor performance of the Canadian provinces as a group in all three years is striking (figures 1 through 3). Five out of the 10 provinces rank amongst the 10 worst performing jurisdictions in the cost and pricing fairness of their auto insurance premiums in 2003, 2004, and 2005. In fact, the three worst ranks in all three years in the Cost and Pricing Fairness indices are occupied by Saskatchewan, British Columbia, and Manitoba—three of the only four jurisdictions among the 60 studied that have public auto insurance monopolies. This result contrasts starkly with the claims of public auto insurers in these provinces which regularly publish anecdotal cases or hypothetical examples as evidence that public auto insurance premiums are less expensive than in other jurisdictions.

Choice Index

The Choice Index (CI) is composed of three variables: Choice to Purchase, Choice of Coverage, and Choice of Insurer. The Choice to Purchase variable is made up of three sub-variables measuring the presence or absence of legal mandates to purchase liability insurance, accident benefits, and coverage for collisions with uninsured or underinsured motorists. The Choice of Coverage variable is also made up of three sub-variables measuring, in monetary terms, regulatory requirements governing the minimum scope or extent of coverage for property damage and liability, the minimum scope of coverage for bodily injury liability, as well as the minimum coverage requirements for accident benefits. The Choice of Insurer variable measures the percentage of the market subject to regulatory prohibitions on competition or, in other words, monopoly auto insurance.

Figures 4 through 6 display the relative ranks of each of the 60 jurisdictions studied (by year) on the Choice Index.

The top 10 best markets for providing consumer choice in auto insurance products, coverage, and provider in all three years are all American states. In contrast, in 2003, 2004, and 2005, nine Canadian provinces were among the 10 worst providers of consumer choice in auto insurance products, coverage, and provider.

Similar to the Cost and Pricing Fairness indices, in all three years (figures 4 through 6) Saskatchewan, British Columbia, and Manitoba

Figure 1: Cost and Pricing Fairness Index, 2003

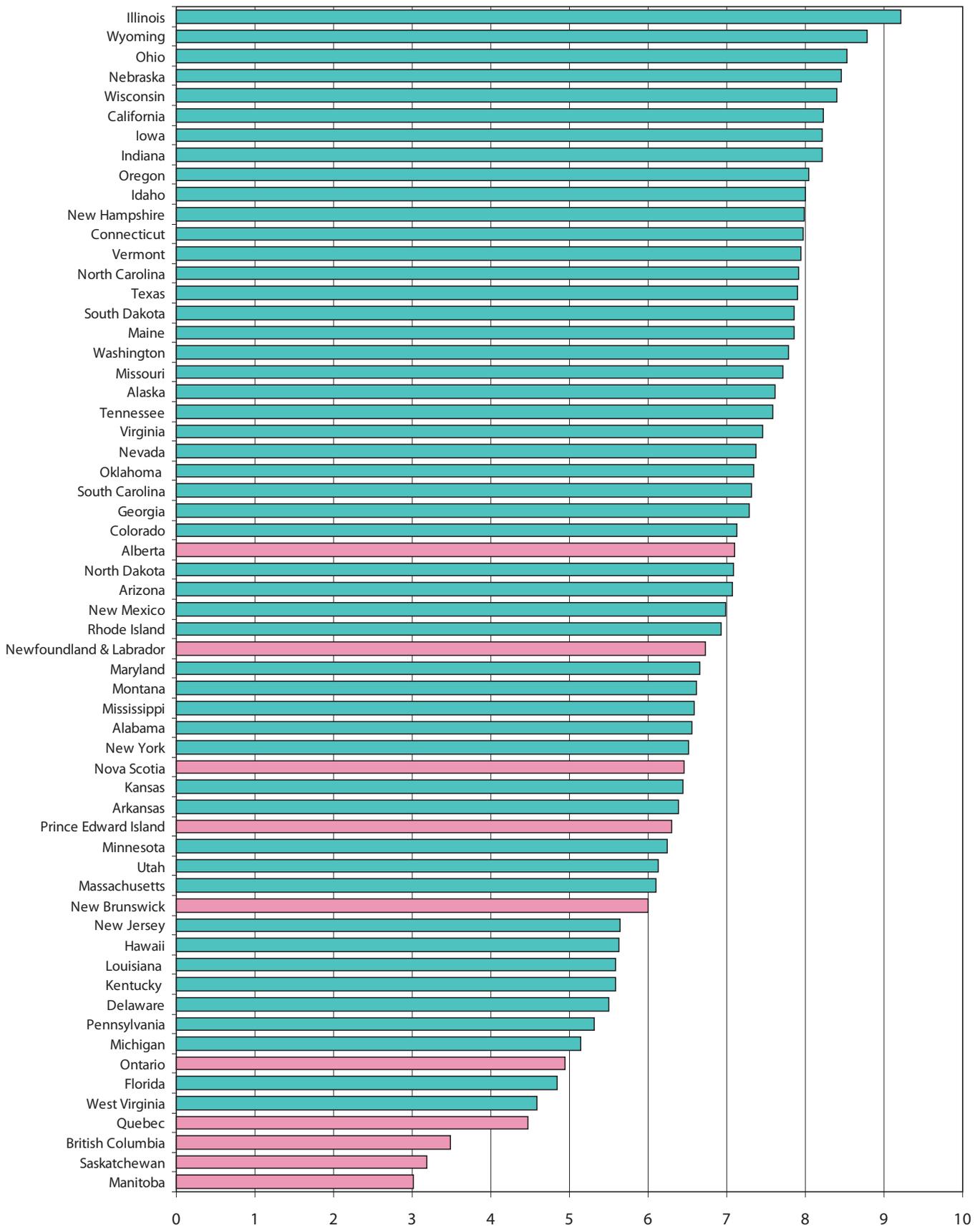


Figure 2: Cost and Pricing Fairness Index, 2004

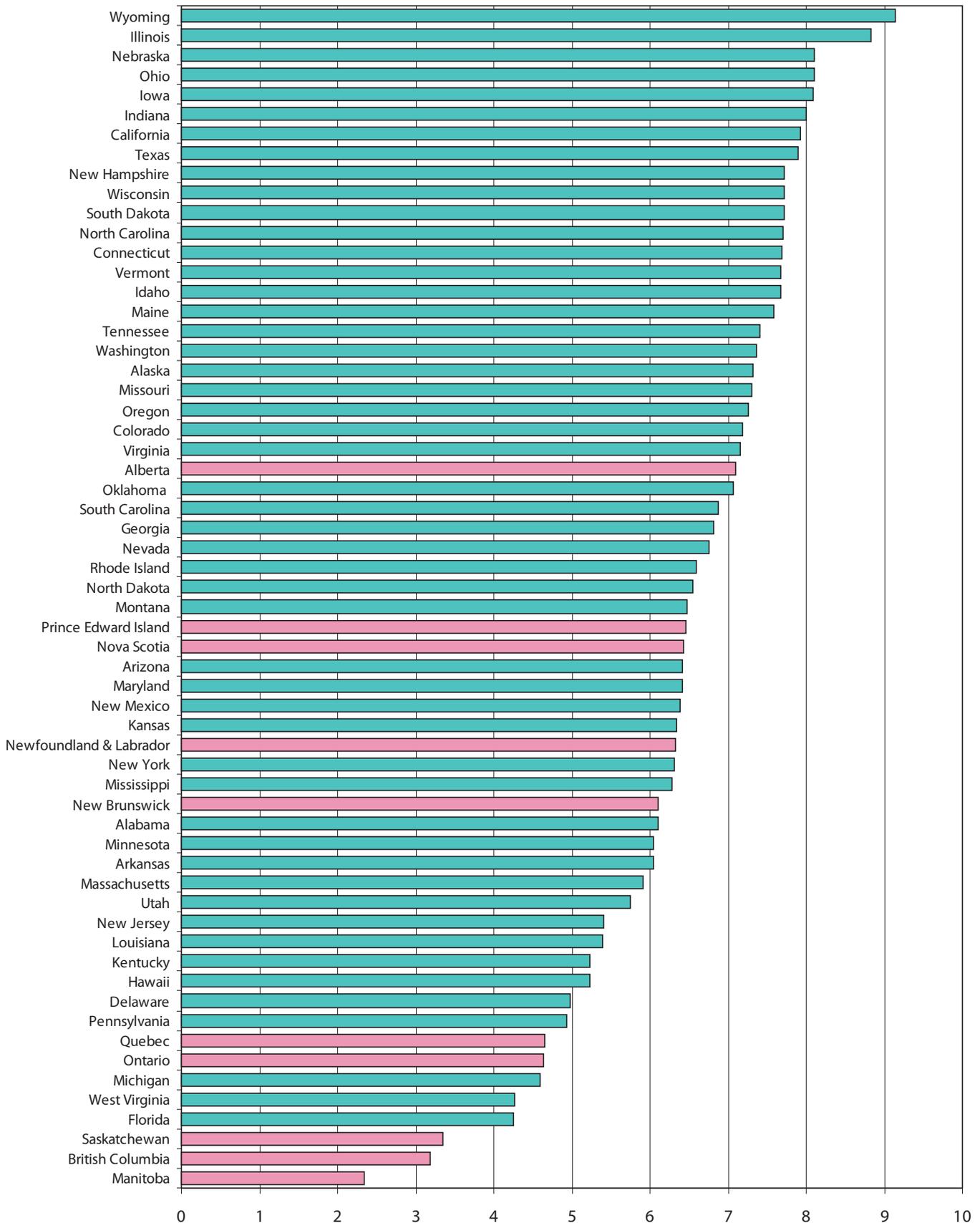
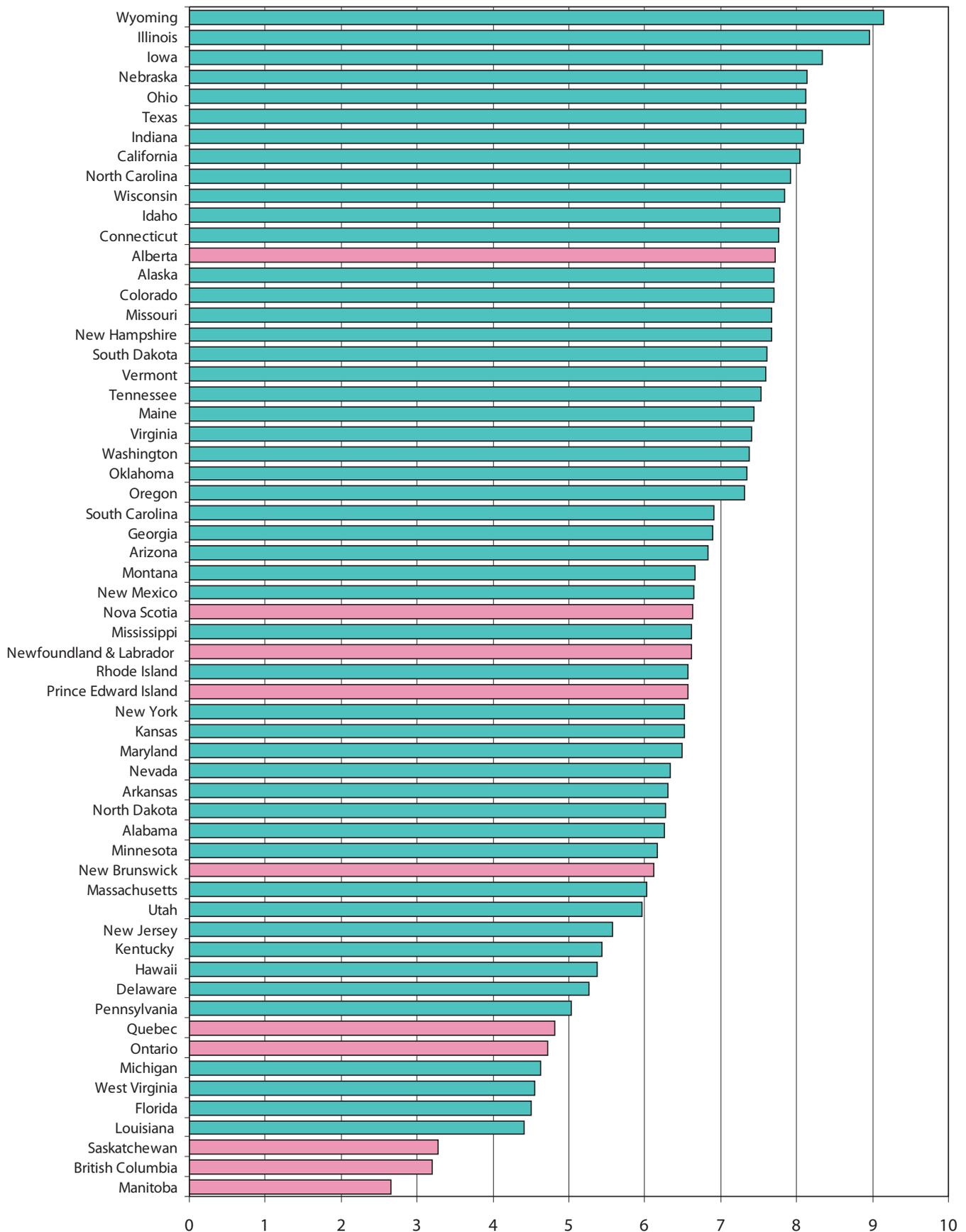


Figure 3: Cost and Pricing Fairness Index, 2005



held the three worst ranks in the Choice indices.

Business Climate Index

The Business Climate Index (BCI) is made up of four variables: Profitability, Competition Barriers, Product Regulation, and Pricing Restrictions. As mentioned earlier, the Profitability variable is empirically the same as the Pricing Sustainability variable used in the Cost and Pricing Fairness Index, but it is conceptualized differently for use in this index. Here the statistic is normally called a “loss ratio.” The variable measuring Competition Barriers is the same as that used in the Choice Index to measure the degree to which consumers can choose their insurers and describes the percentage of the market affected by the legal imposition of rules prohibiting or limiting competition. The Product Regulation variable is the same as the Choice of Coverage variable and consists of three sub-variables. The fourth variable measures differences in Pricing Restrictions and measures the severity of rate filing restrictions in each jurisdiction.

Figures 7 through 9 display the relative ranks of each of the 60 jurisdictions studied (by year) on the Business Climate Index.

On the Business Climate Index, the top 10 best markets in all three years (figures 7 through 9) are all American states. Again, the most obvious finding from this index is that the provinces public auto insurance schemes—Saskatchewan, Manitoba, and British Columbia—are the worst ranked jurisdictions in all three years.

Regulatory Severity Index

The Regulatory Severity Index (RSI) contains 9 variables in total. Five of the six variables that comprise the Business Climate Index are also part of the Regulatory Severity Index. Additional variables include three measures of the presence or absence of coverage mandates and one measure of restrictions on legal rights to assign fault in an auto accident. Jurisdictional performance on the RSI should closely match performance on the BCI. However, the four extra variables included in the RSI create a conceptually distinct measure of auto insurance market quality.

Figures 10 through 12 display the relative ranks of each of the 60 jurisdictions studied (by year) on the Regulatory Severity Index.

In all three years, the top 10 markets that have the least severe auto insurance regulations are all US states. Once again, the Canadian provinces perform poorly as a group.

As figure 10 shows, the Canadian provinces are 10 of the 13 most severely regulated jurisdictions in the 2003 regulatory severity index. Similarly, in both the 2004 and 2005 regulatory severity indices (figures 11 and 12), the Canadian provinces make up 10 of the 15 most severely regulated jurisdictions.

The jurisdictions with the three worst scores in all three years were again those with public auto insurance regimes: Manitoba, Saskatchewan, and British Columbia.

Overall Market Quality Index

The Overall Market Quality Index (MQI) is made up of the 13 variable and sub-variable measures described throughout this paper. Combining the standardized jurisdictional scores across all 13 of the variable measures gives an overall ranking of market quality among the 60 jurisdictions examined in 2003, 2004, and 2005.

The top ten best auto insurance markets in 2003, 2004, and 2005 were all US states (figures 13 through 15). Similar to the other indices in this study, the Canadian provinces were among the worst ranked jurisdictions in all three years.

Yet again, the provinces with public auto insurance schemes—British Columbia, Saskatchewan, and Manitoba—were among the worst performers in the overall market quality index in 2003, 2004, and 2005 among the 60 jurisdictions.

Conclusions

Based on the data available to this study covering 60 markets in Canada and the United States for the years 2003, 2004, and 2005, our main findings are:

1. Canadian provinces as a group tend to be among the most highly regulated markets for auto insurance.
2. Canadian provinces also tend to rank very poorly on measures of overall market quality.
3. The provinces with public auto insurance regimes—British Columbia, Saskatchewan, and

Figure 4: Choice Index, 2003

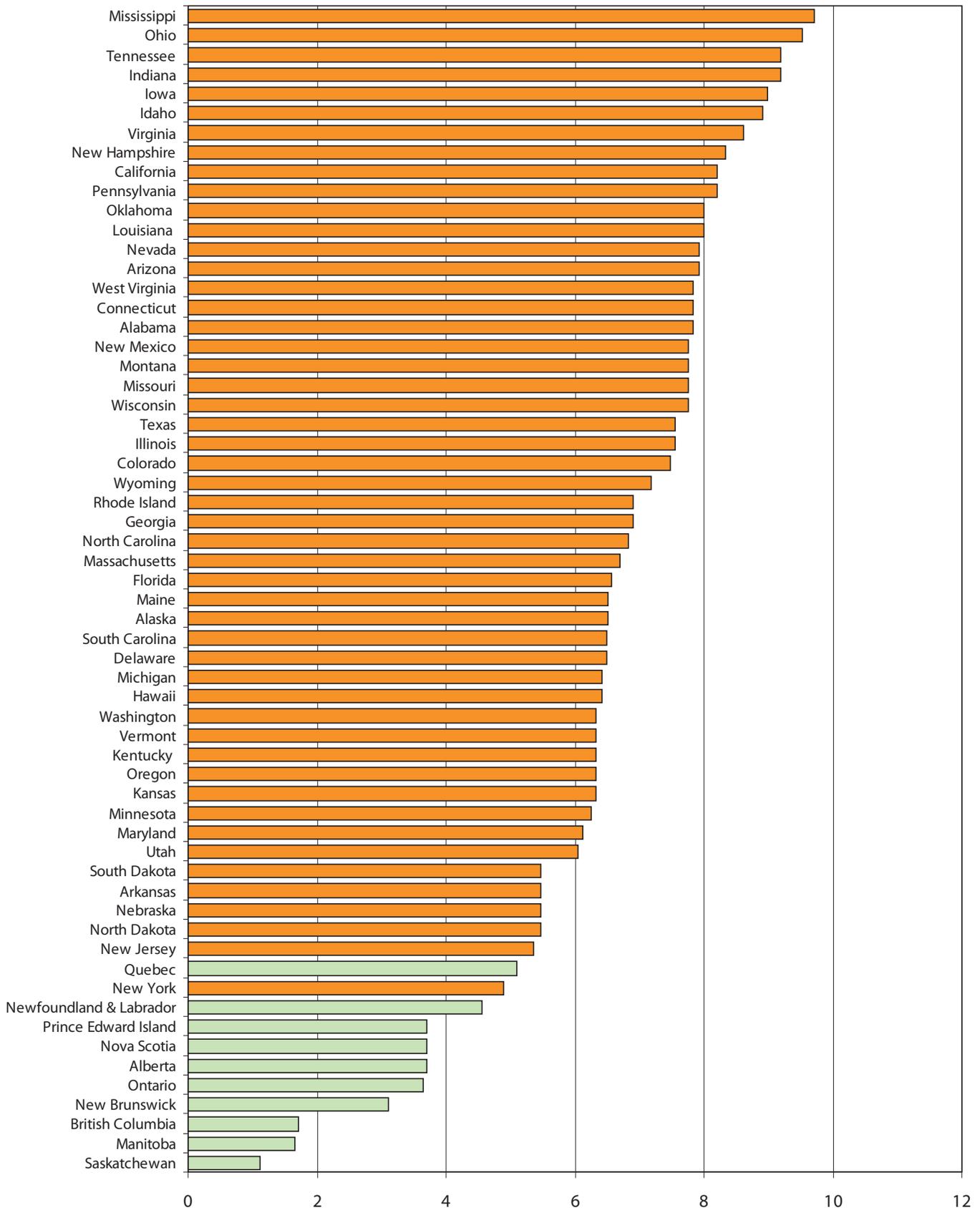


Figure 5: Choice Index, 2004

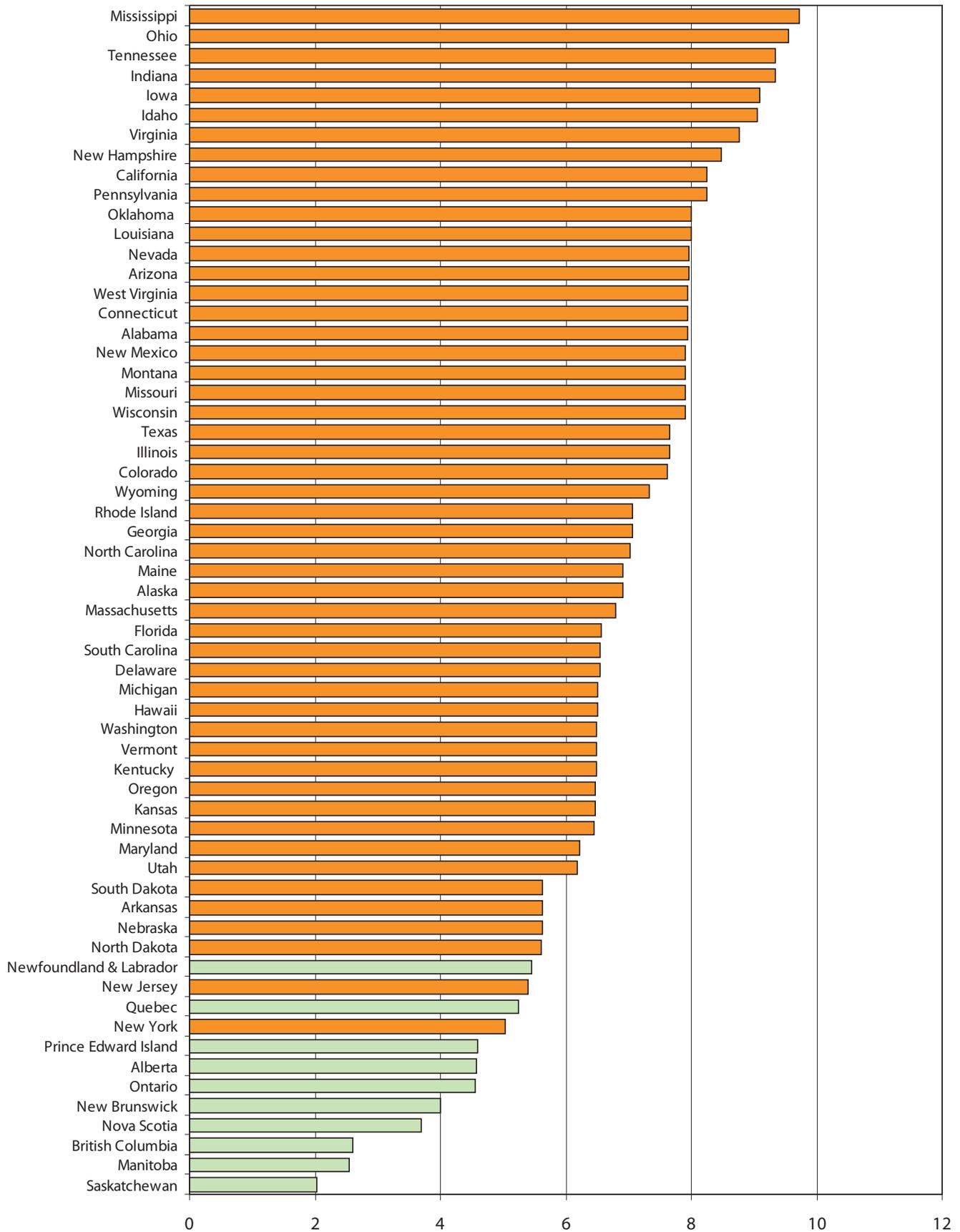


Figure 6: Choice Index, 2005

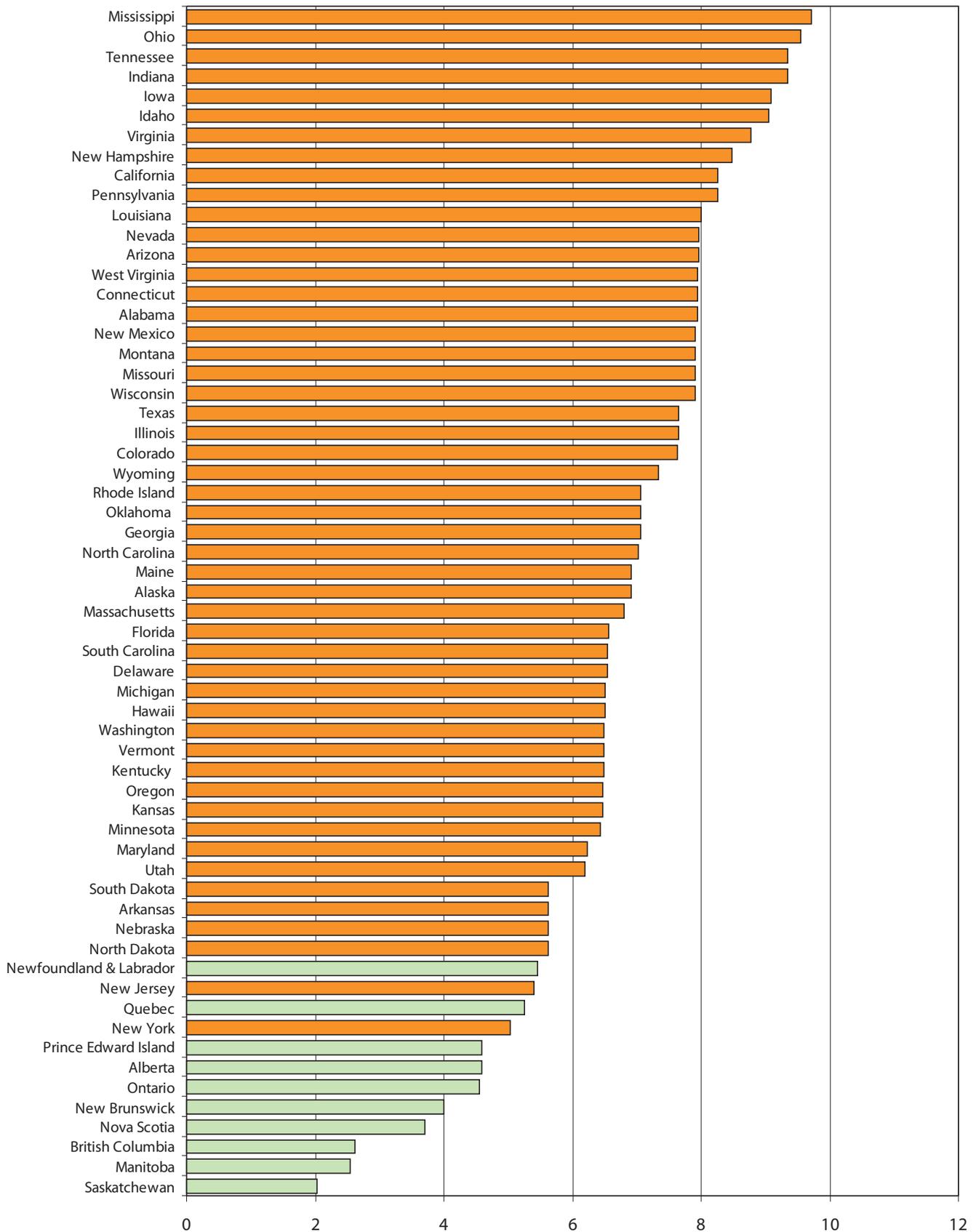


Figure 7: Business Climate Index, 2003

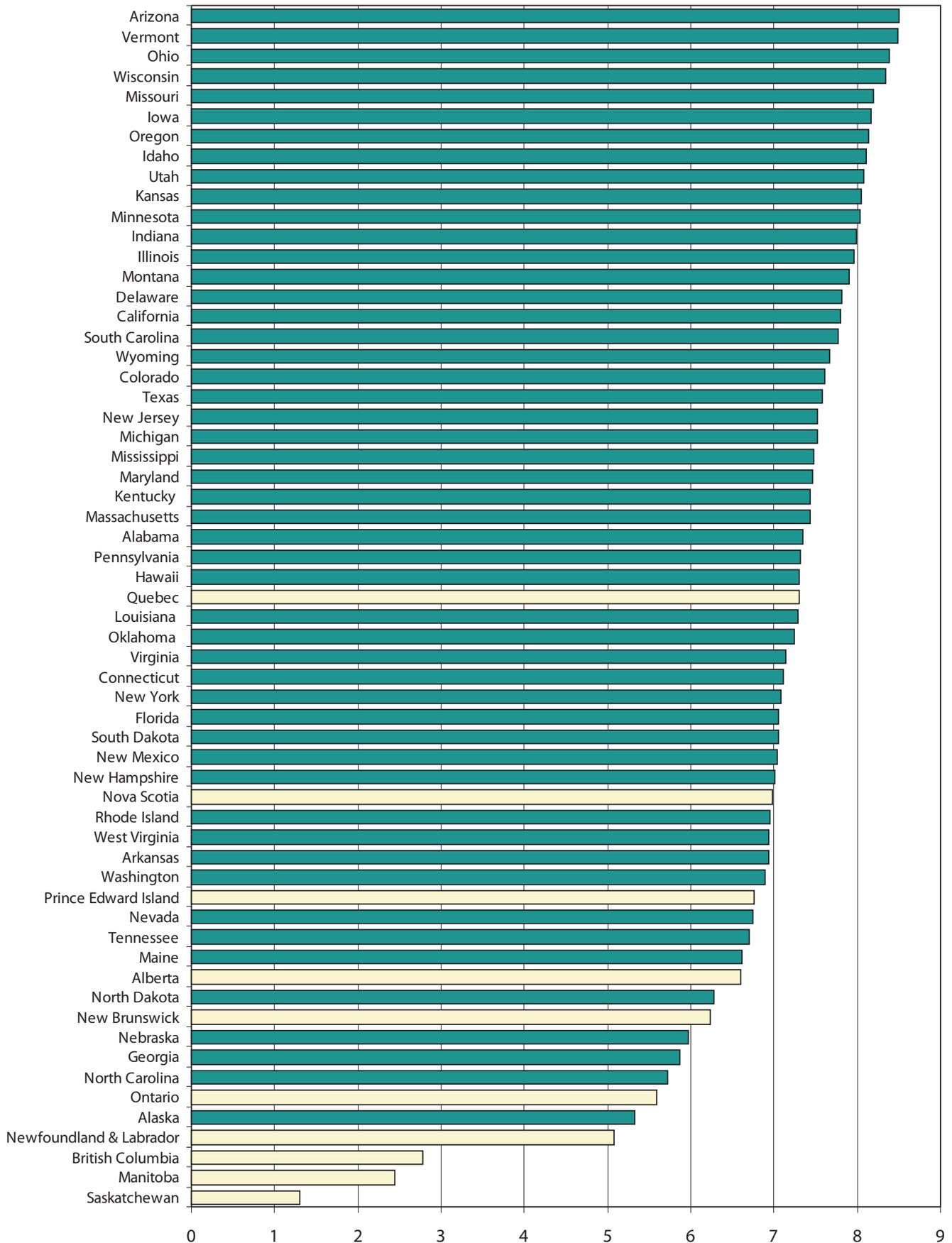


Figure 8: Business Climate Index, 2004

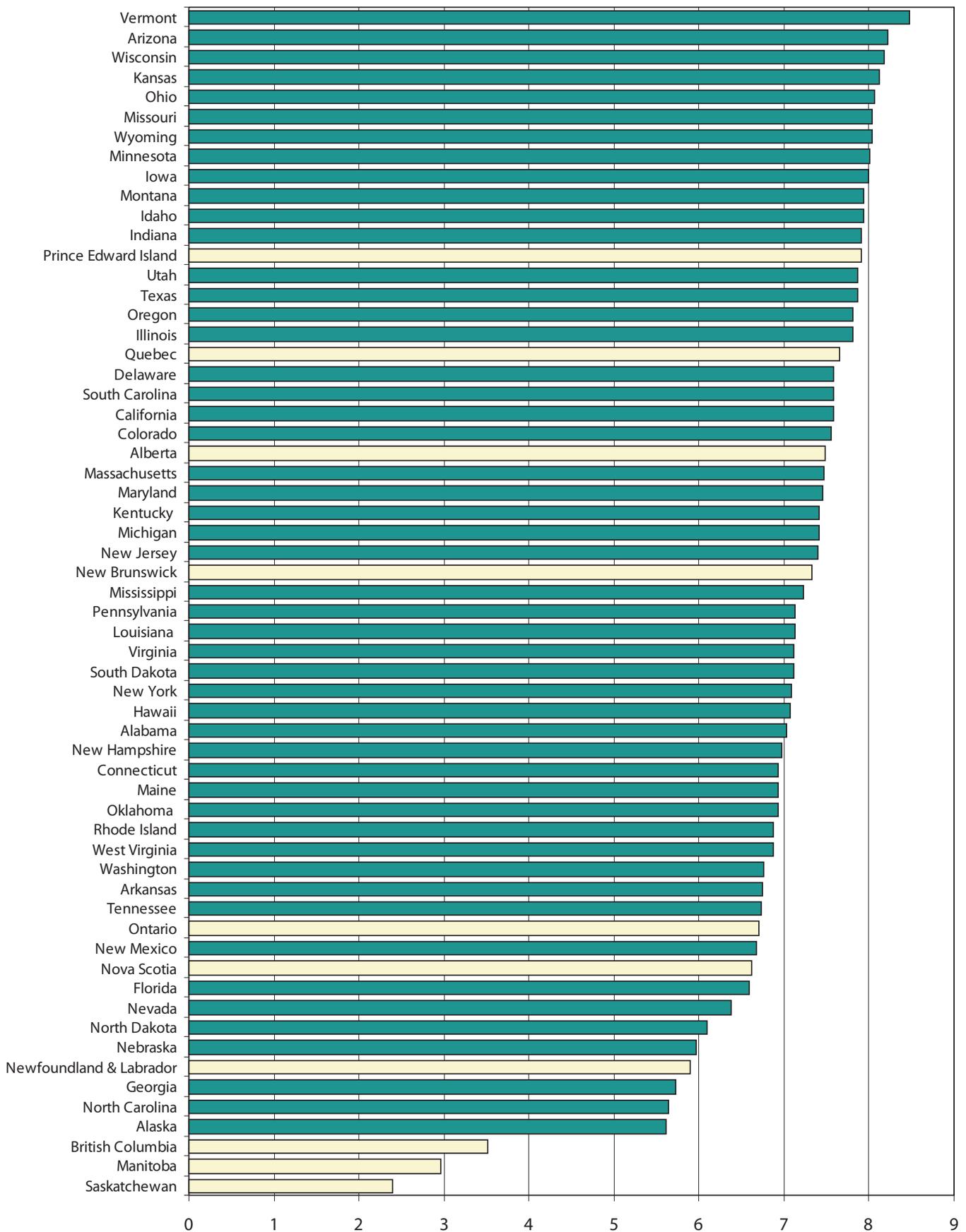


Figure 9: Business Climate Index, 2005

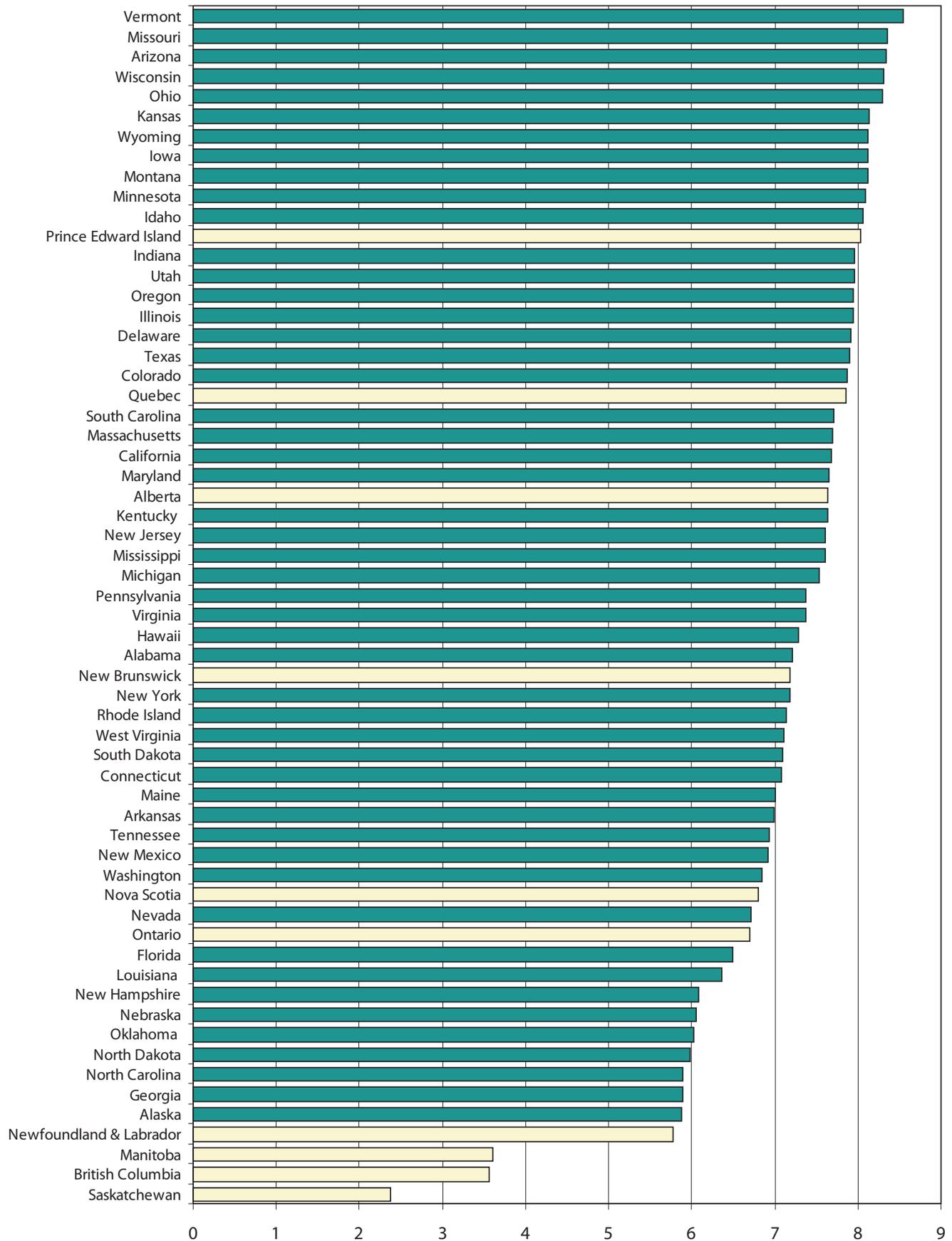


Figure 10: Regulatory Severity Index, 2003

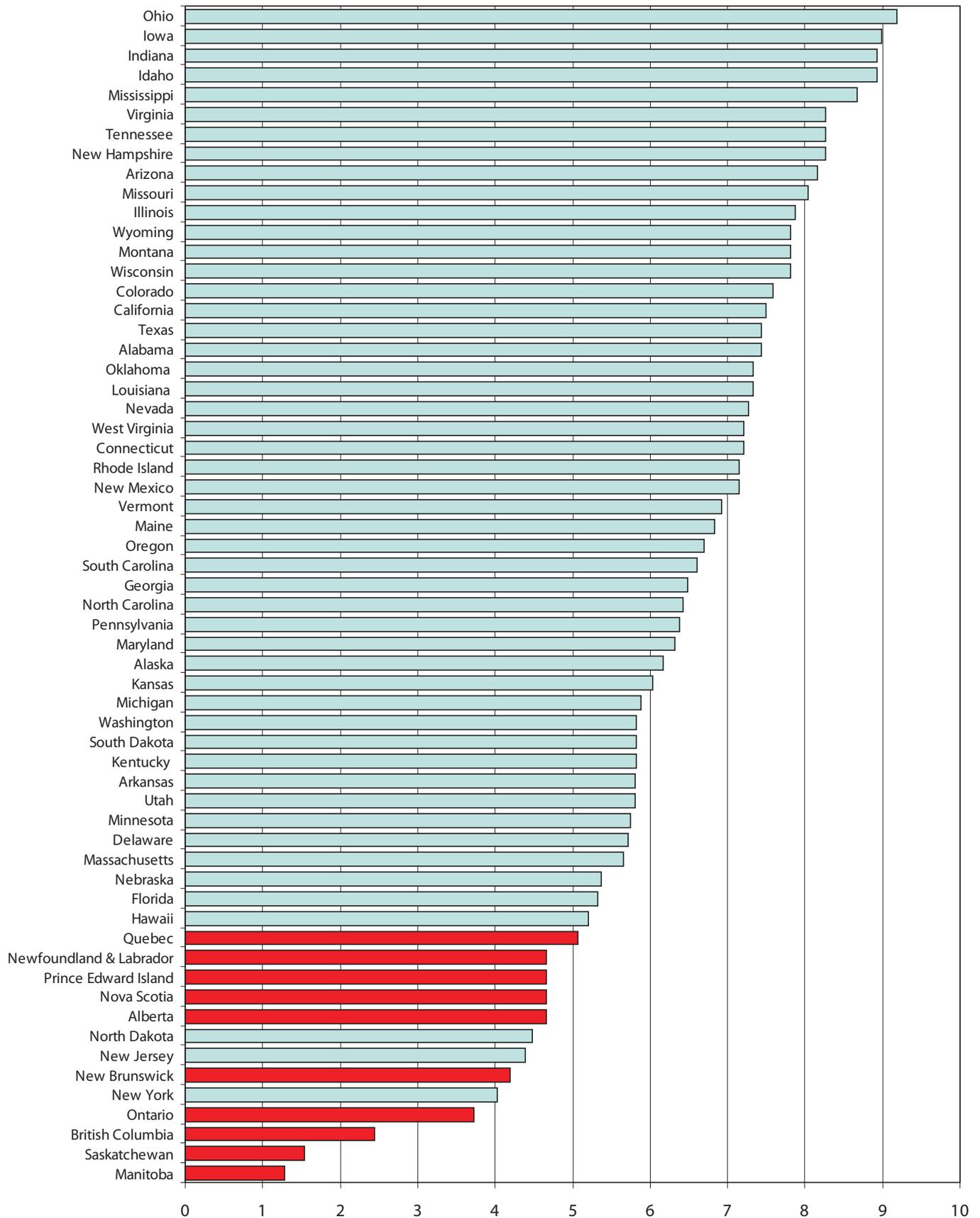


Figure 11: Regulatory Severity Index, 2004

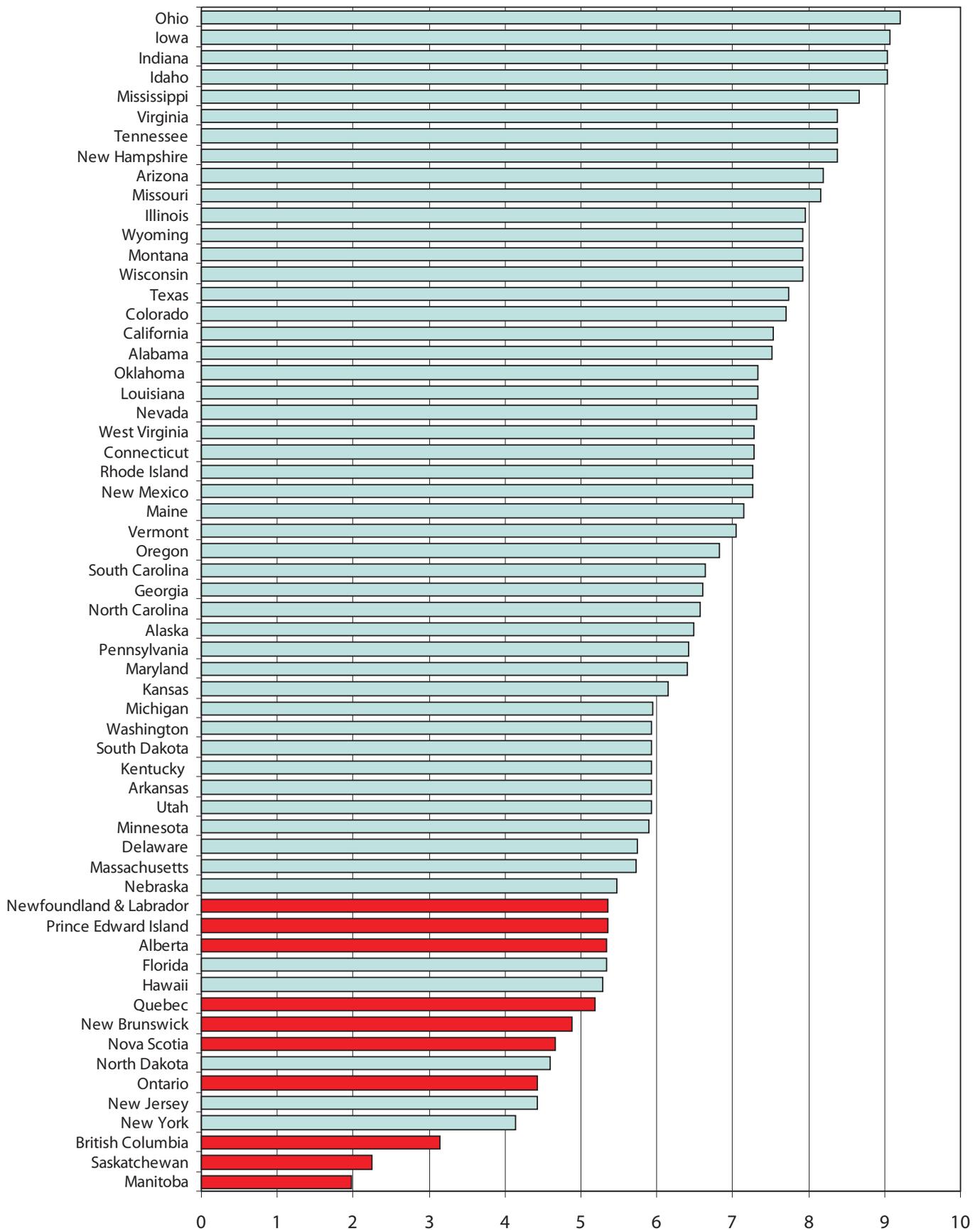


Figure 12: Regulatory Severity Index, 2005

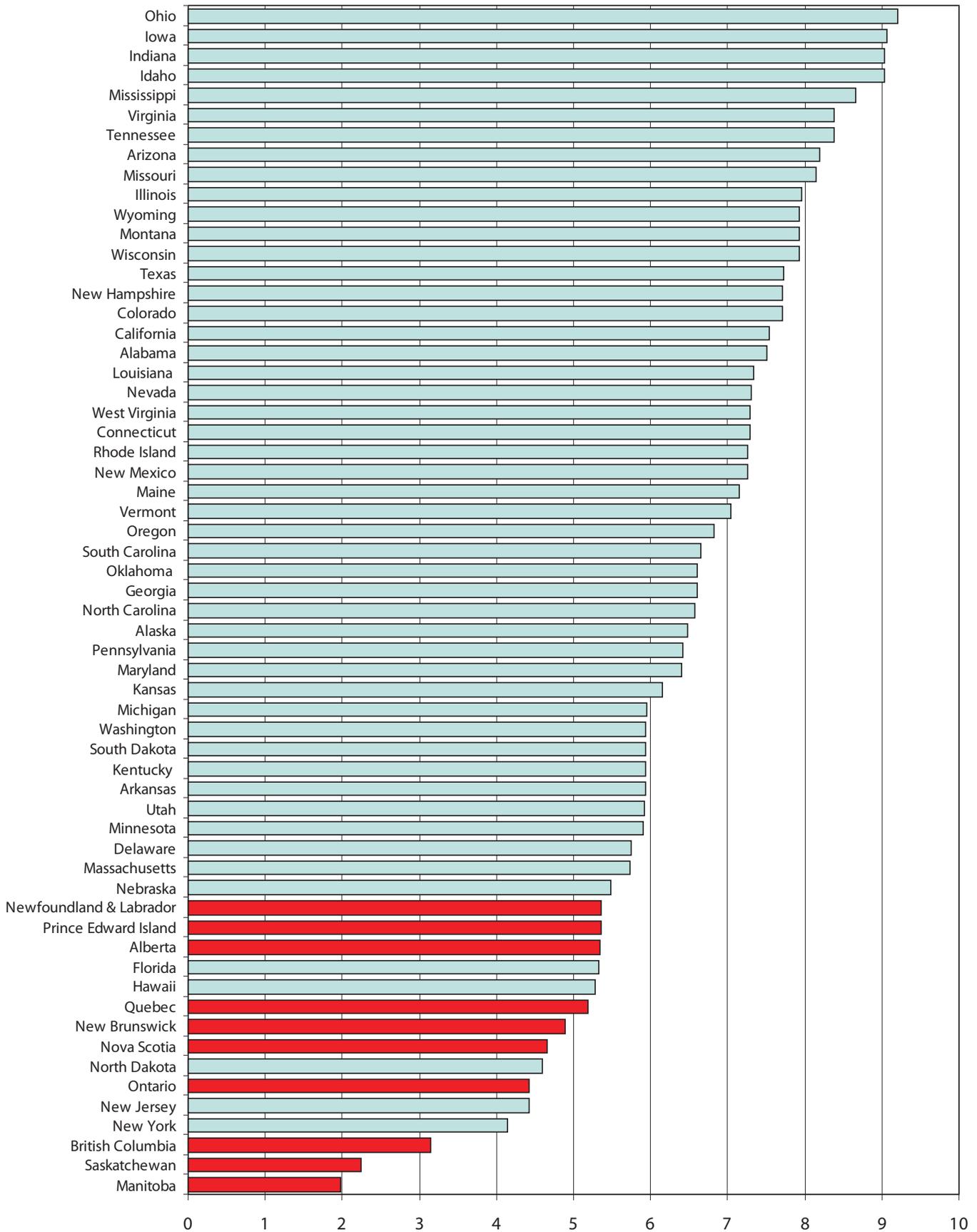


Figure 13: Overall Market Quality Index, 2003

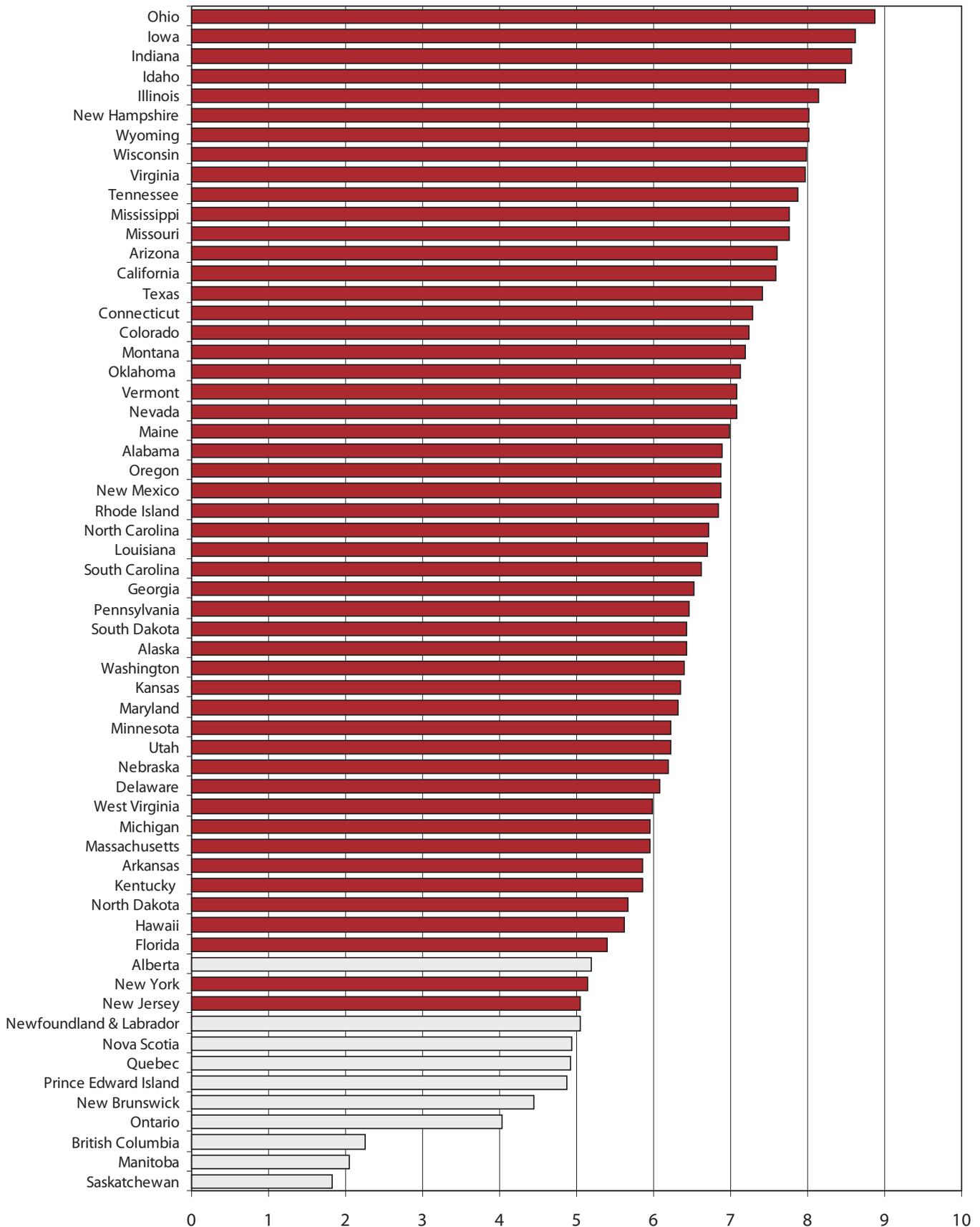


Figure 14: Overall Market Quality Index, 2004

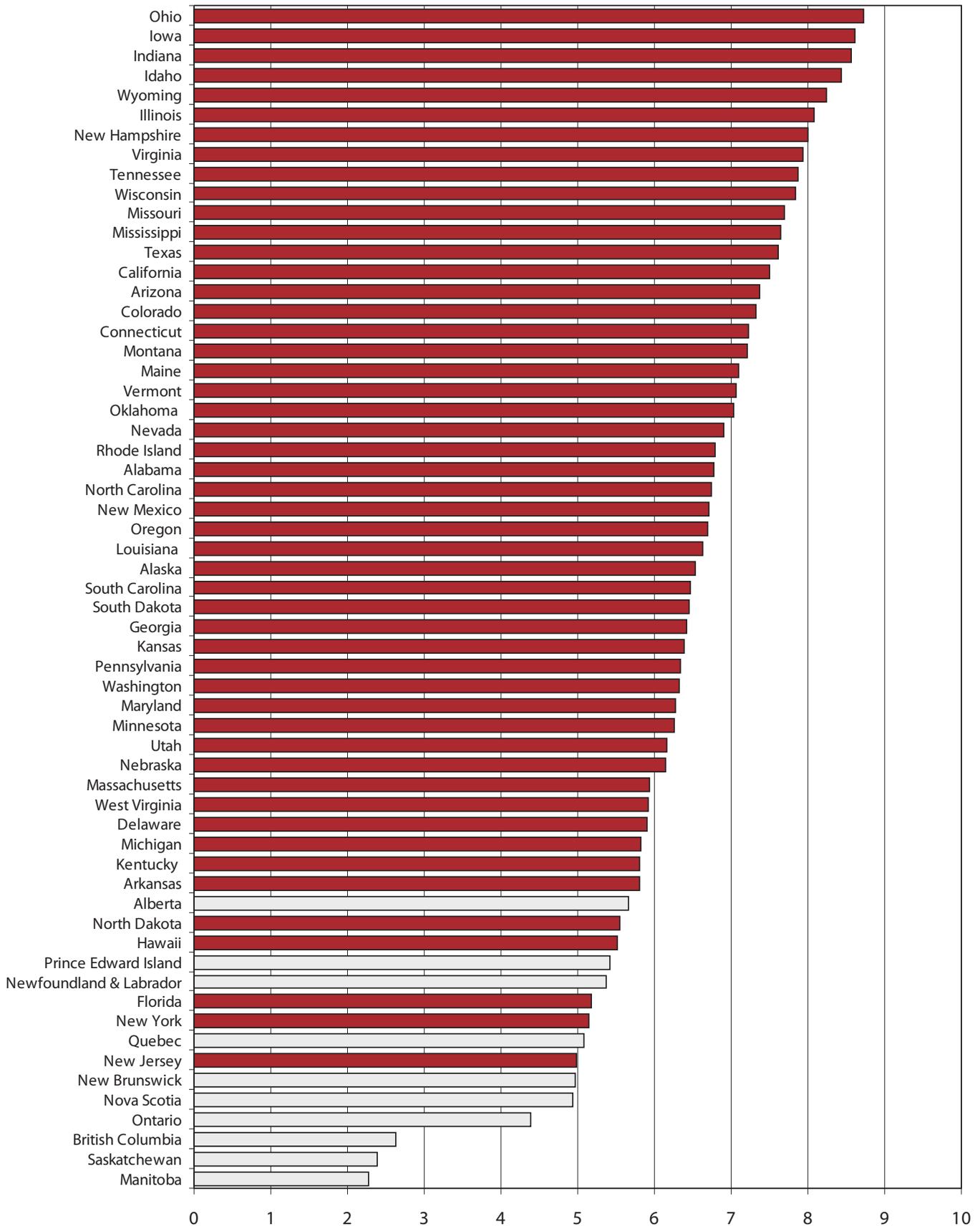
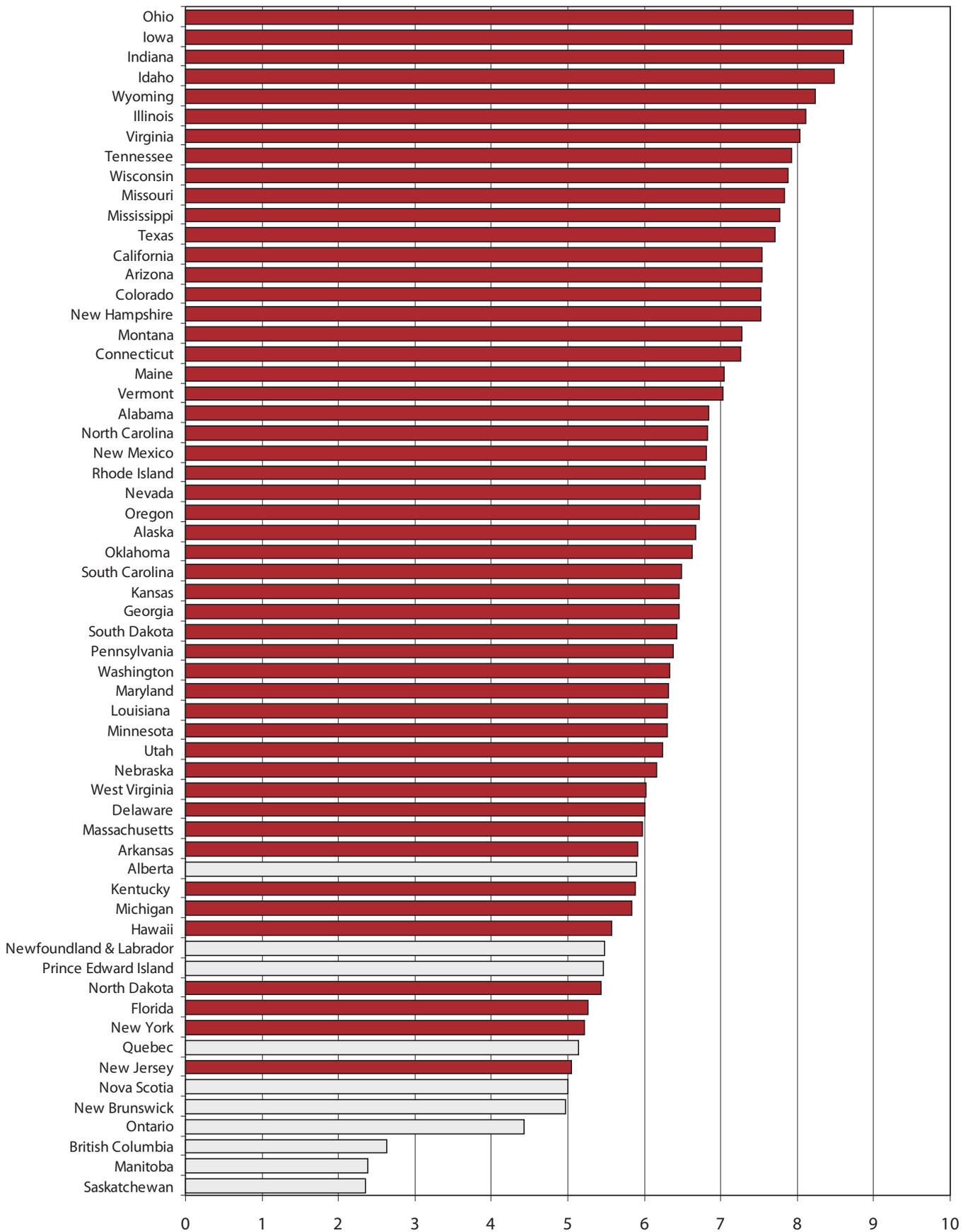


Figure 15: Overall Market Quality Index, 2005



Manitoba—were consistently among the worst performers overall.

Finally, in the process of collecting data for this study, it became clear that there is a need for standardization in the data collected and reported by public sector insurers and regulators. This study recommends the US NAIC *Auto Insurance Database Report* as an appropriate model for structuring a useful, publicly accessible database for comparative research between international auto insurance markets and suggests that both public and private sector insurers work to adopt it as a national standard in their respective jurisdictions.

Notes

- 1 The 2006 edition of this study used 15 sub-variables to create the indices (Skinner, 2006). However, the sub-variables i) Solvency Regulations, and ii) Restricted Pricing Categories (a sub-variable of the “Pricing Regulation” variable) were excluded in this edition because the data were not available.
- 2 A residual market exists when insurance companies in the competitive market insure certain high risk individuals. Insurers push these individuals into a separate “residual market” where the insurance coverage is pooled and the risk is shared across all insurers.
- 3 Variables are assigned a numeric score where the intervals between scores, in addition to the order of scores, has a meaning for the attribute being measured.
- 4 Competition in a market is sometimes measured using concentration ratios (CR). Concentration ratios measure the percentage of the auto insurance industry’s business held by its largest insurers. The maximum value for CR is 100 percent; the minimum is close to zero.

Another method used to measure competition is the Herfindahl-Hirschman Index (HHI). HHI is calculated by squaring the values of market share for each company in an industry—then summing the resulting numbers. The maximum value of the index is 10,000 when one company controls 100 percent of the market (HHI = 1002). Under the Horizontal Merger Guidelines, the US Department of Justice and the Federal Trade Commission have used the HHI as a basis of assessing concentration of national industries when considering the anti-trust implications of merger applications (US Department of Justice, 1992). Under the guidelines, markets in which the HHI is in excess of 1,800 are considered to be “high concentration”; HHI in the range of 1,000-1,800 is characterized as “moderate concentration,” and HHI under 1,000 means “low concentration.” There are serious criticisms in the economics literature that the use of CR and HHI measures does not truly measure competition. Theoretically, even a monopoly may behave competitively if threatened by potential new entrants. As Baumol (1983) suggests, such monopolies would give less cause for government intervention than those in less contestable markets. Ideally, therefore, a measurement of contestability in each market is the best way to accurately gauge the actual level of competition.

- 5 A variable that is assigned a numeric score where the “order” of the score has a meaning for the attribute being measured.
- 6 Uninsured/underinsured motorist coverage is included but represents a small proportion of the total cost of this coverage.
- 7 For a review of the impact of rate regulation on auto insurance markets, see Bouzouita, 1997, and Harrington, 2002.
- 8 This method is used by both the World Bank, in *World Development Indicators* and by the International Monetary Fund, in *International Financial Statistics*.

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Editing, design, and production

Kristin McCahon

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