

# Introduction to Public Economics

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EC313 - Public Economics: Taxation

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# Goals of This Section

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- Define **Public Economics**
- Give broad overview of Canada's government and public finance framework
- Measure the “size” of government
- Overview of government revenues and expenses

# What is Public Economics?

# Defining Public Economics

- **Public Economics** is the study of the role of government in the economy
  - It examines how government policies affect economic efficiency, income distribution, and overall welfare
- Concerned with the *microeconomic* aspects of the economy
  - How government actions affect individual and firm behavior
  - Macroeconomic functions of government (fiscal policy, monetary policy) are in separate fields
- Attempts to answer three key questions:
  - When should the government intervene in the economy?
  - What is the effect of these interventions?
  - Why do they choose to intervene in this way?

# When Should the Government Intervene?

- **Market Failures:** Situations where the free market does not allocate resources efficiently
  - Public goods: goods that are non-excludable and non-rivalrous (e.g., national defense, public parks)
  - Externalities: costs or benefits that affect third parties not involved in a transaction (e.g., pollution)
  - Imperfect competition: markets dominated by a few firms, leading to monopolies or oligopolies
  - Assymmetric information: situations where one party has more or better information than the other (e.g., used car market)
  - Irrational behaviour: situations where individuals do not make rational decisions (e.g., addiction, procrastination)

# Effects of Alternative Interventions

- Competitive markets (in theory) generate an *efficient* allocation of resources
  - Allocation is **Pareto Efficient**: no one can be made better off without making someone else worse off
  - Subject to specific assumptions
  - Called the **First Fundamental Theorem of Welfare Economics**
- But that allocation is not always *equitable*
  - Some people may get significantly more resources than others

# Effects of Alternative Interventions

- Government can intervene to redistribute resources
- In theory, it can do this without reducing efficiency
  - Through transfers of initial wealth
  - Called the **Second Fundamental Theorem of Welfare Economics**
- In reality, government intervenes with taxes and transfers that may reduce efficiency
  - Taxes can distort incentives and lead to inefficiencies
  - Creates an efficiency-equity trade-off



# Effects of Alternative Interventions

- **Direct Effects:** Immediate impact of government policies on individuals and firms, without changes in their behaviour
- Examples:
  - A carbon tax on gasoline raises revenue from drivers
  - Income taxes raise revenue from workers
  - Corporate taxes raise revenue from firms
  - Tariffs raise revenue from imports
  - A tax credit for charitable giving reduces government revenue

# Effects of Alternative Interventions

- **Indirect (Unintended) Effects:** Effects of government policies due to changes in behaviour of individuals and firms
- Examples:
  - A carbon tax on gasoline may lead drivers to use public transit more
  - Income taxes may lead workers to work fewer hours
  - Corporate taxes may lead firms to invest less or move to a different jurisdiction
  - Tariffs may lead consumers to buy fewer imported goods
  - A tax credit for charitable giving may lead individuals to donate more
- Much of current research in public economics focuses on these indirect effects

# Why Do Governments Intervene in Particular Ways?

- **Political Economy:** a field of economics that studies the interaction between politics and economics
  - How do politics and economics drive policy and economic outcomes?
  - Depends on economic system, political system, norms, etc.
  - Some example research papers:
    - ” Do Leaders Matter? National Leadership Growth Since World War II”
    - “Why Do Developing Countries Tax So Little?”
    - “Voting Technology, Political Responsiveness, and Infant Health: Evidence from Brazil”
- **Public choice:** a subset of political economy that applies economic principles to political decision-making
  - Uses a rational choice framework (e.g. utility maximization) to study political decisions
  - Studies very similar topics to political economy as a whole

# Normative vs. Positive Economics

- **Positive Economics:** the study of how things are
  - What are the effects of a carbon tax on gasoline consumption
  - How do income taxes affect labour supply
  - Primarily an empirical field
  - Most research in public economics is positive economics
- **Normative Economics:** the study of how things should be
  - Should the government impose a carbon tax on gasoline?
  - Should income taxes be progressive or flat?
  - Key difference with positive economics is that it involves value judgements
  - Primarily a theoretical field

# Some Current Research Topics in Public Economics

- Public economics is a broad research field with significant overlap with other fields like Labour, Education, Health Economics
- Some of the research paper titles from the most recent NBER Public Economics meeting:
  - “Paternalistic Social Assistance: Evidence and Implications from Cash vs. In-Kind Transfers”
  - “Health Impacts of Federal Pandemic Aid to State and Local Governments”
  - “The Racial Penalty in Job Ladder Transitions”
  - “Behavioral Responses to Estate Taxation: Evidence from Taiwan”
  - “The Big Economic Consequences of Small Financial Shocks: Evidence from Minor Car Crashes”

# Canada's Government

# Introduction

- In this section we discuss basics of Canada's public finance system
- Broad overview, not comprehensive
- We cover
  - History
  - Responsibilities of each level of government

# History

- Tax and spending powers come from the **Constitution Act, 1982**
  - Amends the British North America (BNA) Act, 1867
  - Structure and powers of government are the same in both acts
  - Constitution act adds elements like the Charter of Rights and Freedoms
- Constitution act specifies federal and provincial responsibilities
  - Federal: items that are common to all provinces
  - Provincial: items that are specific to each province
- Municipal responsibilities are not outlined in constitution
  - They are delegated by the provinces
  - Means lots of differences across provinces in the way municipalities operate



# Federal Government

- Key areas of federal responsibility as outlined in the constitution:
  - Direct and indirect taxation
  - National defence
  - Navigation and shipping (e.g. marine shipping)
  - Regulation of trade and commerce (e.g. trade disputes, tariffs)
  - Criminal justice system
  - Money and banking
  - Census
  - Citizenship
  - Postal service

# Federal Government

- The federal government raises revenue mainly through direct and indirect taxes
  - **Direct tax:** paid by directly to the taxing authority that cannot be shifted to another entity
    - e.g. income, estate, capital gains, property tax
  - **Indirect tax:** paid indirectly through an intermediary that can pass it to another entity
    - e.g. sales tax (HST/GST), tariff

# Federal Government

- The federal government has broad taxing and spending powers
- At the time of confederation, most revenue came from tariffs (customs duties)
- Now the majority comes from personal and corporate income taxes and sales taxes

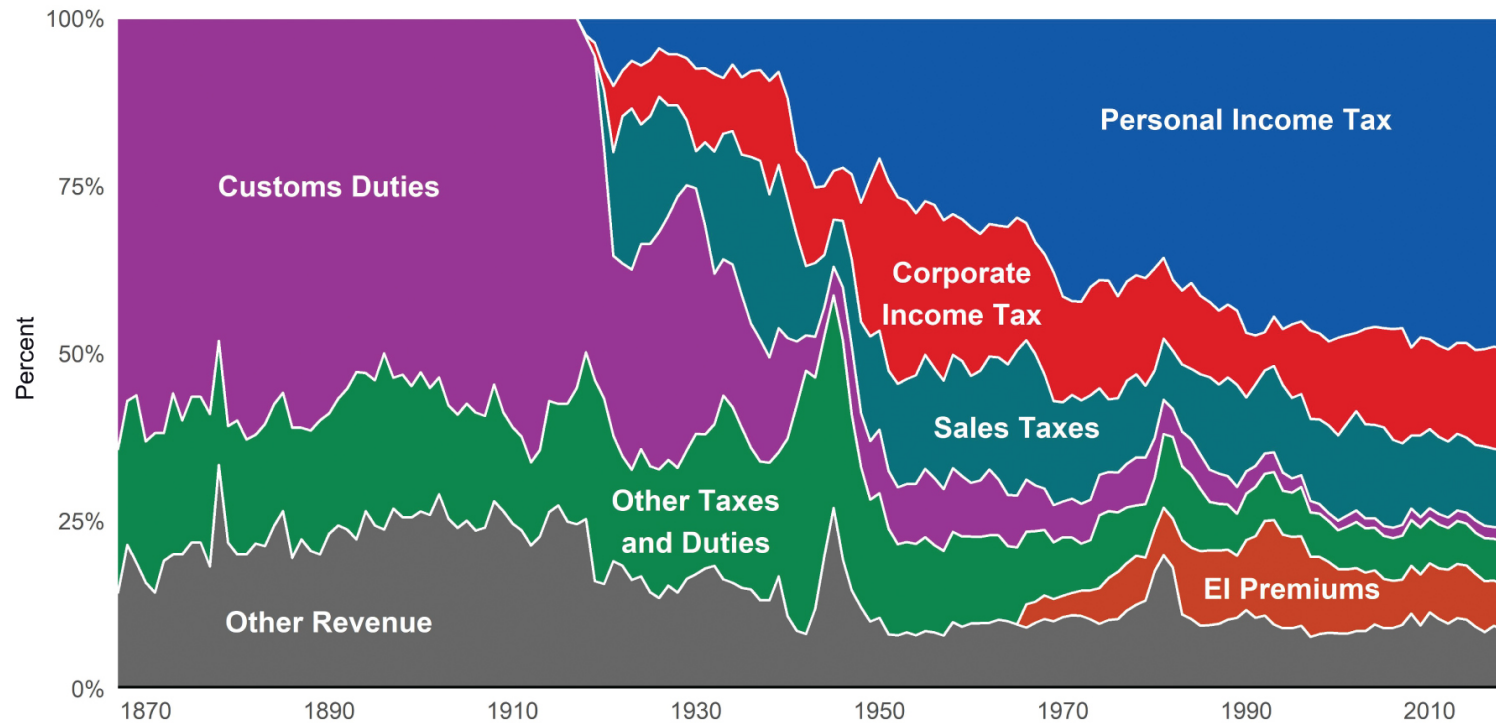


Figure: Composition of Canadian Federal Revenues

# Provincial Government

- Key areas of federal responsibility as outlined in the constitution:
  - Direct taxation within the province (note: not indirect taxation)
  - Prisons
  - Hospitals
  - Municipalities
  - Education
  - Natural resources
  - Incorporation of companies

# Provincial Government

- Provincial government can only levy direct taxes
  - Mainly income and property tax
  - Courts have defined retail sales taxes and excise taxes on tobacco and gasoline as direct taxes (for some reason)
- At confederation, most revenue came from federal government transfers to provinces
  - Very little from direct taxation
- Now, taxes account for 50% of revenues
  - Rest is federal transfers, sales of goods and services, fines/fees, natural resources

# Size of Government

# Introduction

- Politicians often quibble over the size of government
  - Conservatives prefer smaller government
  - Liberals tend to prefer larger government
- There are different ways to measure its size
  - Expenditures (total or as fraction of GDP)
  - Revenues (total or as fraction of GDP)
  - Government employment
  - Number of regulations
- Most common is to measure using **annual expenditures**

# Classification of Expenditures

- Can classify government expenditures into three types
  1. Purchases of goods and services
    - Government buys many goods/services
    - Examples: Military equipment, buildings, consulting services, professional training
  2. Transfers of income to people, businesses, other governments
    - Examples: HST rebate, Canada Pension Plan, Canada Child Benefit
  3. Interest payments
    - Government borrows to spend when revenues are insufficient
    - Does this by issuing bonds
    - Interest payments are due on that borrowing



# Statistics on Expenditures

TABLE I.I		Federal, Provincial, and Local Government Expenditures		
	Total Expenditure (\$ millions)	In 2020 Dollars (\$ millions)	In 2020 Dollars per Capita (\$ per person)	Share of GDP (%)
1990	328,129	573,389	20,751	47.2
1995	392,152	613,297	20,958	47.2
2000	444,426	638,222	20,825	40.2
2005	534,669	684,576	21,257	37.6
2010	688,291	809,407	23,835	41.3
2015	789,125	853,950	23,935	39.6
2019	935,620	942,500	25,110	40.5
2020	1,148,771	1,148,771	30,252	52.1

*Source:* Finances of the Nation, Macroeconomic Database, accessed October 2021, <https://financesofthenation.ca/macrodata/>.

Figure: Canadian Government Expenditures

# Statistics on Expenditures

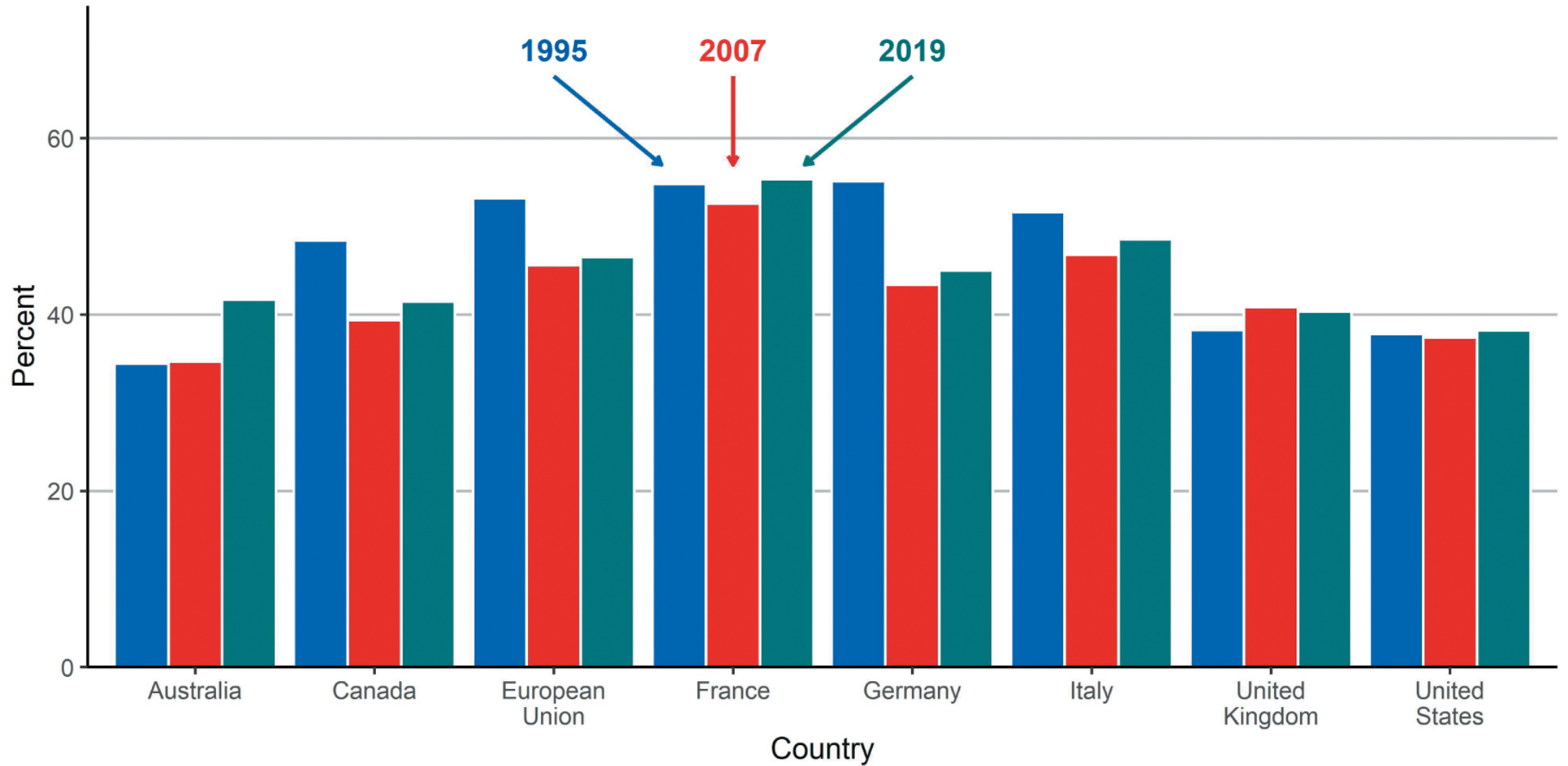
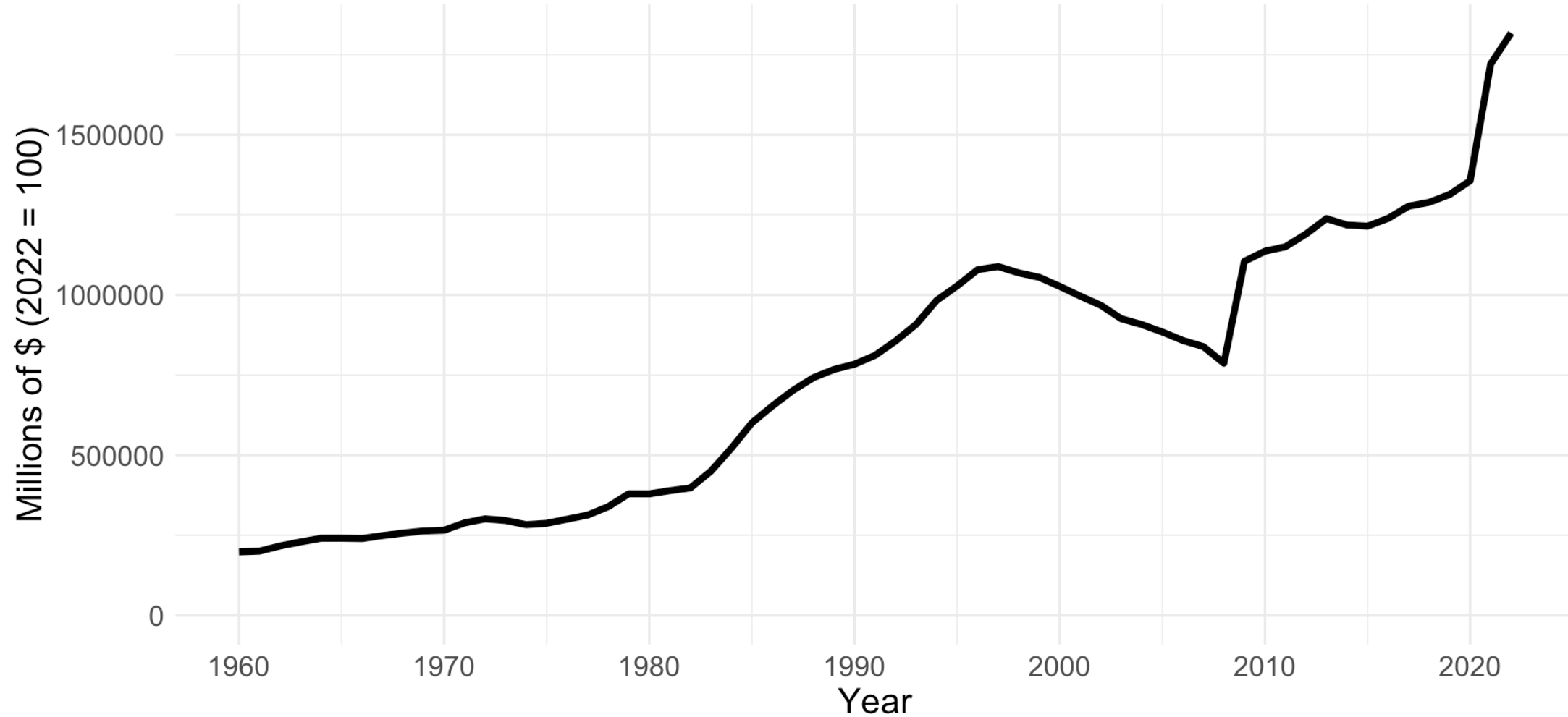


Figure: International Government Expenditures

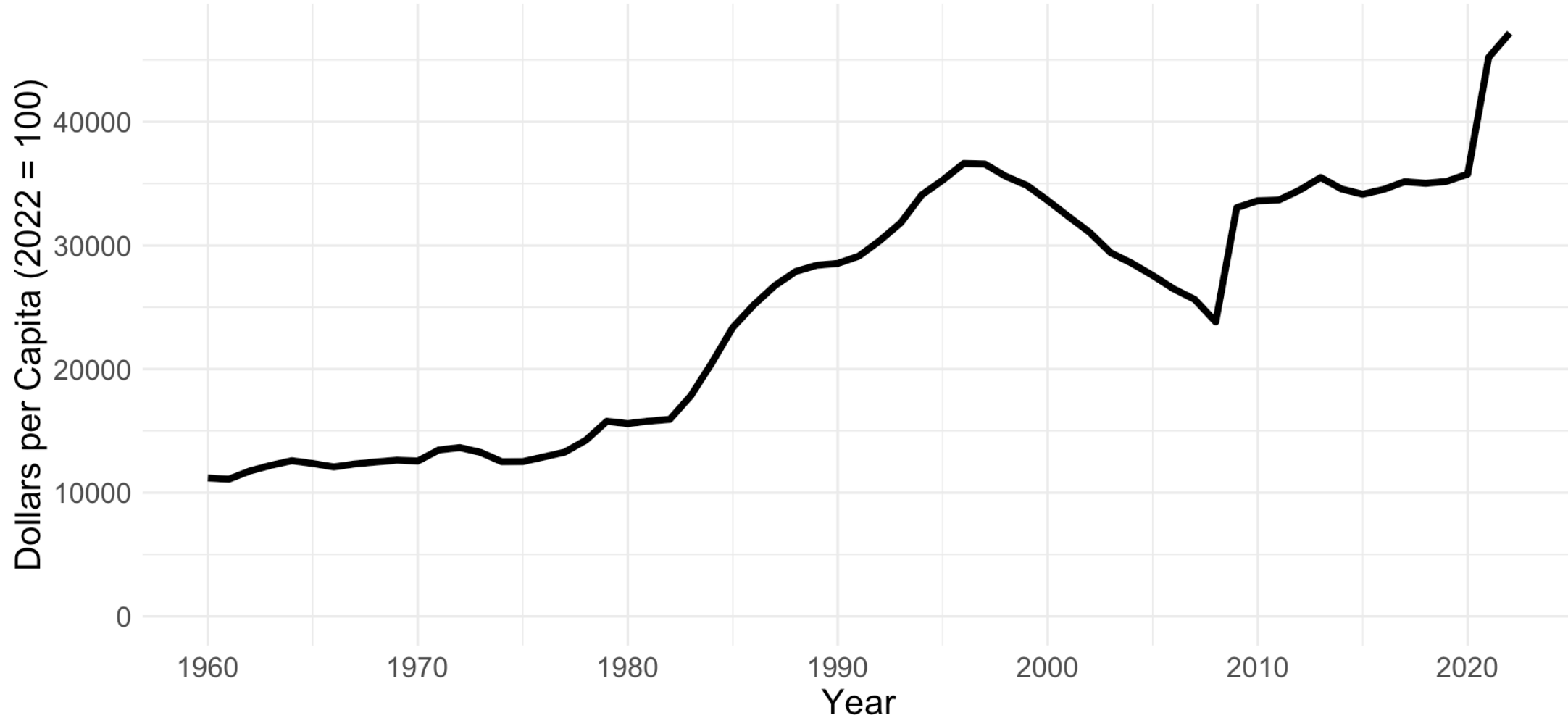
# Statistics on Expenditures

Real Canadian Federal Debt



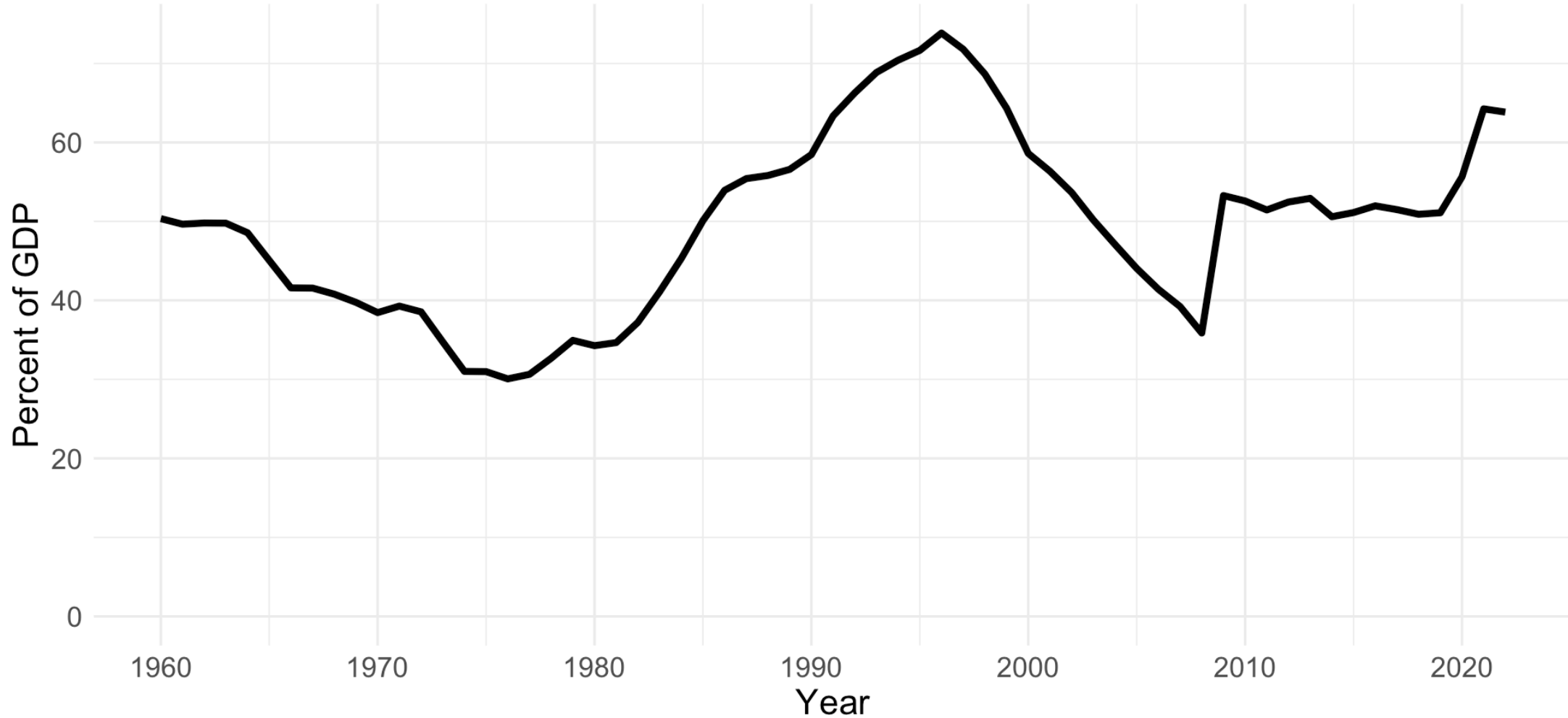
# Statistics on Expenditures

Real Canadian Federal Debt per Capita

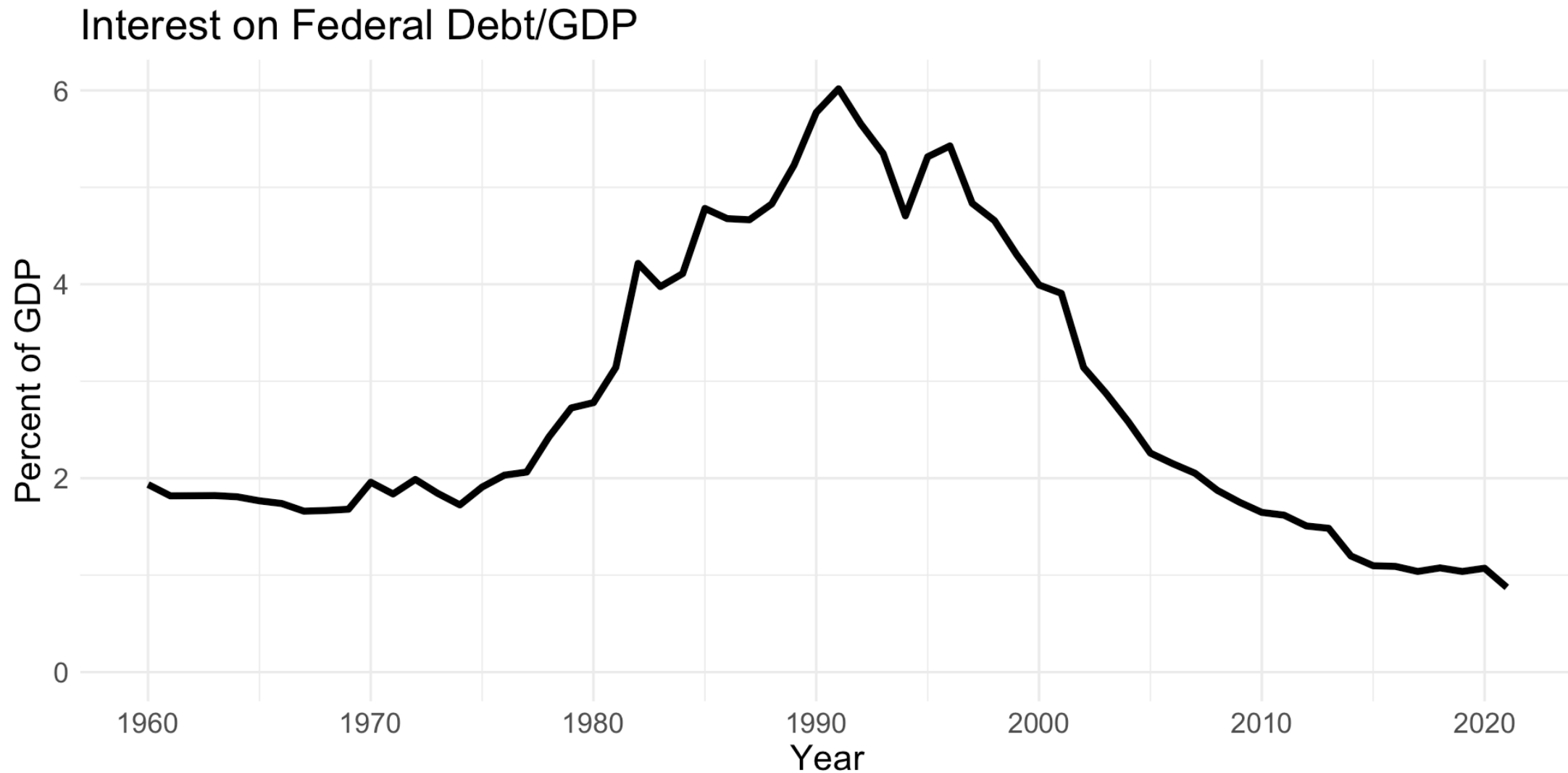


# Statistics on Expenditures

Real Canadian Federal Debt/GDP



# Statistics on Expenditures



# Difficulties Counting Expenditures

- Some expenditures are not easy to count
- Loan guarantees (e.g student loans) and contingent commitments (e.g CPP)
  - Government is committed to spend at some point in the future
  - Amounts of these commitments are not fully known
  - Use accrual accounting to budget
- Regulations
  - Impose costs on individuals/businesses
  - These costs do not appear in government budget

# Difficulties Counting Expenditures

- Tax expenditure
  - Indirect spending through reductions in taxes owing
  - Examples: charitable giving tax credit, partial taxation of capital gains, zero rating groceries
  - Not reflected in budget
- Capital investments
  - Capital goods (e.g. machines) are consumed slowly over time
  - Typically large value in year they are purchased
  - Gives mistaken impression of significant government involvement in economy



# Federal Government Budget

# Federal Revenues

- Total is about \$498 billion in 2024
  - Projected to be \$545 billion in 2028
- 84% is raised through **taxes**
  - Personal income tax: 50%
  - Corporate income tax: 13%
  - Goods and services tax (GST): 11%
  - Other taxes: 10%
- Smaller amount through non-tax sources
  - Employment insurance premiums: 7%
  - Other revenue (e.g. crown corporations, investments): 9%

# Federal Expenditures

- Total is about \$535 billion in 2024
  - Projected to be \$608 billion in 2028
- 50% transfers to individuals or governments
  - Transfers to individuals: Old age security, employment insurance, Canada pension plan, etc.
  - Transfers to governments: grants for health, social services, equalization, etc.
- 41% direct expenditures
  - National defence
  - RCMP
  - Parks
  - Border services
  - etc.

# Visualization

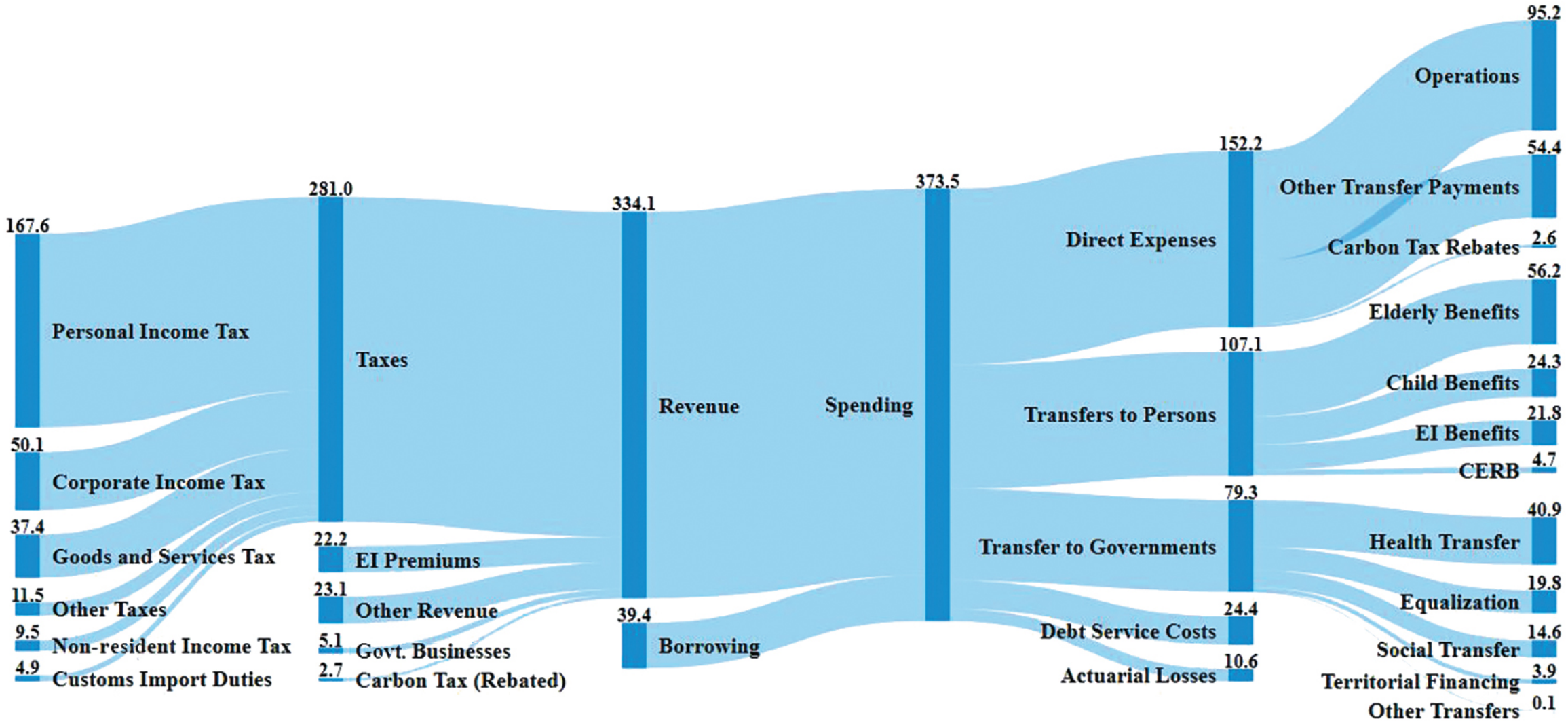


Figure: Federal Government Revenues and Spending

# Provincial Government Budgets

# Provincial Revenues

- Total revenue from 2019 is about \$450 billion
  - Sum across all provinces
- 57% comes from taxes
  - Personal income tax: 25%
  - Sales tax: 15%
  - Corporate income tax: 8%
  - Other taxes (payroll, property, fuel, tobacco): 9%
- 20% comes from federal transfers
- 23% comes from other sources
  - Sales of goods/services
  - Fines and fees
  - Crown corporations



# Provincial Expenditures

- Total spending from 2019 is about \$473 billion
- 92% for program expenditures
  - Health care: 36%
  - Other: 20%
  - Social services: 15%
  - Education: 13%
  - Post-secondary: 7%
- Remaining 8% is for interest on debt

# Municipal, Territorial, Indigenous Governments



# Municipal, Territorial, Indigenous Governments

- Municipal governments
  - Rely heavily on property taxes, transfers from provincial governments
  - Spend mainly on local services (e.g. police, fire, roads, parks)
- Territorial governments
  - Powers delegated by federal government
  - Rely heavily on transfers from federal government
  - Spend on similar things to provincial governments
- Indigenous governments
  - Many governed by the Indian Act
  - Increasingly self-governing
  - Can raise some independent revenue

# Fiscal Transfers

# Introduction

- Federal government collects half of all government revenue
  - Spends only one third
- Provinces and municipalities collect other half government revenue
  - Spend two thirds
- Imbalance is addressed through **fiscal transfers**
  - Federal government transfers money to provinces and municipalities
  - Provinces also transfer money to municipalities
- Transfers can be conditional or unconditional
  - Conditional: must be spent on specific programs
  - Unconditional: can be spent on anything

# Transfers and Constitutional Responsibilities

- Constitution Act outlines responsibilities of federal and provincial governments
- Conditional federal transfers do not violate constitution
  - Federal government not providing services directly
  - Provinces can choose to participate
  - Nevertheless controversial
- Noteworthy unconditional grant is **equalization**
  - Provides funds to provinces that have below average ability to raise revenue
  - Formula has been a matter of debate for years

# Summary

# Summary

- Public economics is the study of the role of government in the economy
- Government intervenes to correct market failures and redistribute resources
- Governments are structured in Canada according to the Constitution Act
- Federal government has broad taxing and spending powers
- Provincial governments have more limited taxing powers
- Government size can be measured in several ways, most commonly by expenditures
- Spending has increased significantly over time, but is more stable as share of GDP
- Sources of spending and revenues differ by level of government
- There are significant transfers between governments

# References

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