

**Regional Performance:
Decomposition Analysis**

Forecast Services Workshop

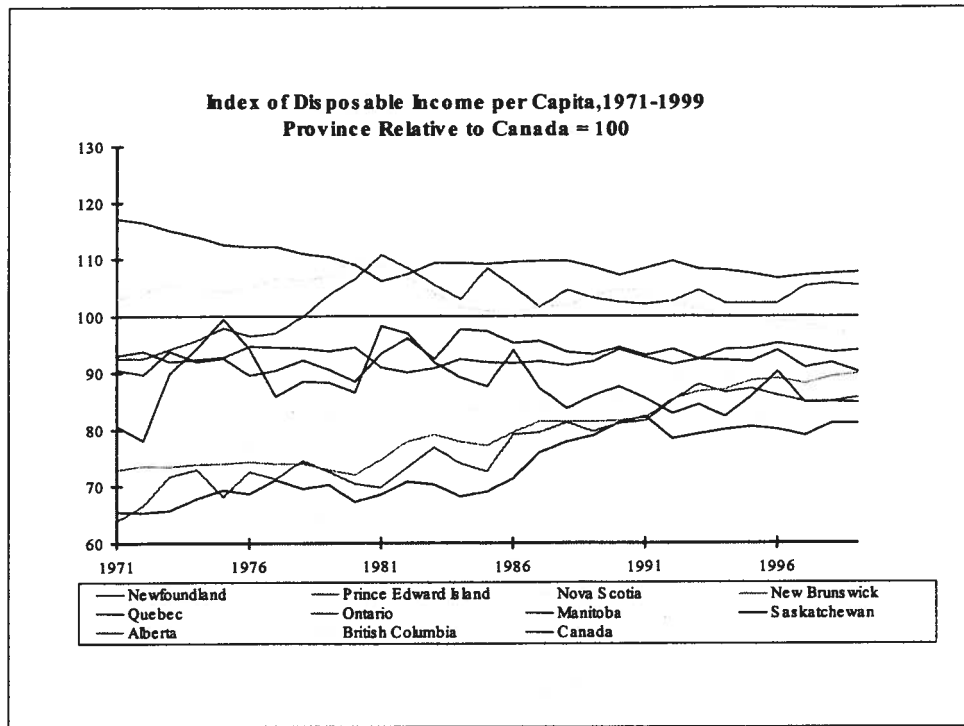
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Regional Economic Disparities

- Has there been convergence?
- What has contributed to this convergence?
- What has been the role of policy?
- Where do we go from here?

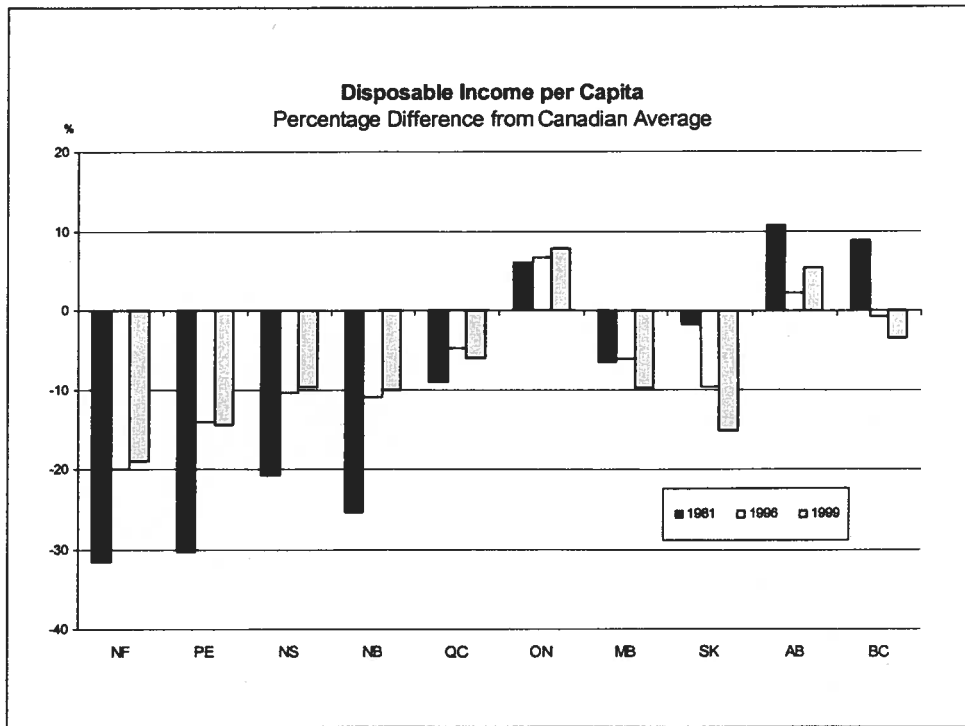
These are the basic questions to be answered.



Although there is a general impression of convergence, not all provinces are gravitating towards the middle. Note that Saskatchewan is sliding down, while Quebec and Manitoba just maintain their position below the Canadian average.

British Columbia is the only province to drop from above average to below average.

And Alberta moved from below average to above average during the first rise in OPEC prices and the associated economic activity.



This plot of deviations from the average income may be easier to follow. Atlantic Canada has made a lot of progress since 1981. Manitoba and Saskatchewan appear to be drifting away, while Alberta and BC are hovering around the mean.

Personal Disposable Income

- Over time
- Across regions
- Absolute versus relative convergence

The decomposition analysis has been applied to personal disposable income per capita.

The same approach could be used for other measures - such as private plus public consumption, personal income, or disposable income per household.

The Regional Range - 1996

	NEW SNA	OLD SNA	NEW INDEX	OLD INDEX
CN	17855	17299	100	100
NF	14305	14453	80.1	83.5
ON	19038	18183	106.6	105.1
AL	18507	18198	103.7	105.2

Nominal disposable income per capita. Using 1996 since there is a common set of data for both SNA sets.

Even though the levels are different, the relative positions are little changed.

A spread of about 25% between the highest income and lowest income province remains, after many years of "country-building" through government programs and transfers.

In the new National Accounts:

Universities are out of the personal sector - now in government. This reduces YDC by grants to universities and other university income, except tuitions.

Payroll taxes paid only by employers (e.g., health tax) are now treated as an indirect tax, which then is "recovered" through the price system, if passed on. Otherwise contributions by employer and employees are labeled as social security contributions, and not added to direct taxes. However, increases in EI contributions reduce disposable income as before.

Regional patterns remain fairly stable.

Convergence 1981-99

- Picked three years - 1981, 1996, 1999
- Convergence evident in each province
- Disparities still remain

The attached tables show the detailed decomposition for three years.

Decomposition Analysis

$$\text{YDC/POP} = \text{LT/POP} * \text{INCOME/ET} * \text{YDC/INCOME} * \text{ET/LT}$$

Demographic:

$$\text{LT/POP} = \text{SOURCE/POP} * \text{LT/SOURCE}$$

Economic production:

$$\text{INCOME/ET} = \text{EARNED/RDP} * \text{RDP/ET} * \text{INCOME/EARNED}$$

Redistributive policies:

$$\text{YDC/INCOME} = \text{YP/INCOME} * \text{YDC/YP} = (1+\text{TR}) * (1-\text{TD})$$

Macroeconomic performance:

$$\text{ET/LT} = 1 - \text{URATE}/100$$

TR - transfer rate equal to transfers as a share of market income.

TD - direct tax rate, as a share of personal income

This decomposition first considers four components and further disaggregates these into 8 further parts.

Further decomposition is warranted to examine:

- the role of young and old people, not in the labour force source population
- the effect of GDP deflator differences across regions
- the effect of wage and unincorporated income, particularly farm income
- the effects of various transfer programs by level of government and type of transfer

Introduction of spatial cost-of-living indicators would also be useful.

Reasons Differ - 1999

	PEI	Newfoundland
YDC/POP	85.58	81
LT/POP	100.64	88.44
INCOME/ET	81.39	85.85
YDC/INCOME	112.80	118.73
ET/LT	92.63	89.86

Source: Table 1

PEI and Newfoundland are not that different in terms of overall per capita incomes. But a much larger proportion of the population is seeking work in PEI (indeed more than the Canadian average).

Earned income per worker is higher in Newfoundland.

Transfers and taxes increase disposable income much more in Newfoundland than PEI.

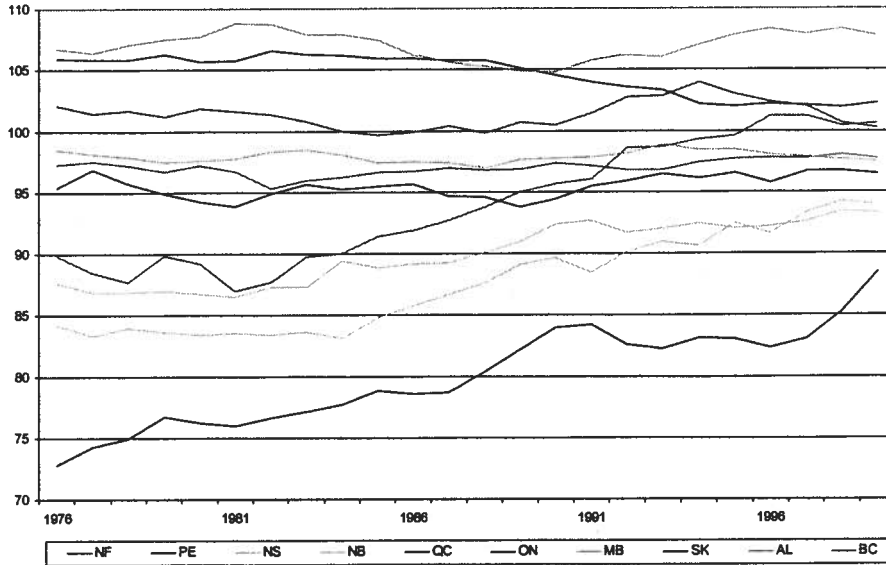
The unemployment rate is much higher in Newfoundland.

Highlights

- 1. Some convergence of YDC/POP**
- 2. SOURCE/POP index improving for Atlantic, falling for Prairies**
- 3. Low PRATE for Atlantic**
- 4. EARNED/RDP declining for Saskatchewan and Alberta. Others close.**
- 5. High productivity level in Alberta and Ontario**
- 6. MI/EI index rising in Atlantic Canada through 90s**
- 7. TR effect dominates**
- 8. TD effect in Quebec from 1976 until early 90's.**
- 9. Overall macro balance**
- 10. Correlation of URATEs, no convergence**

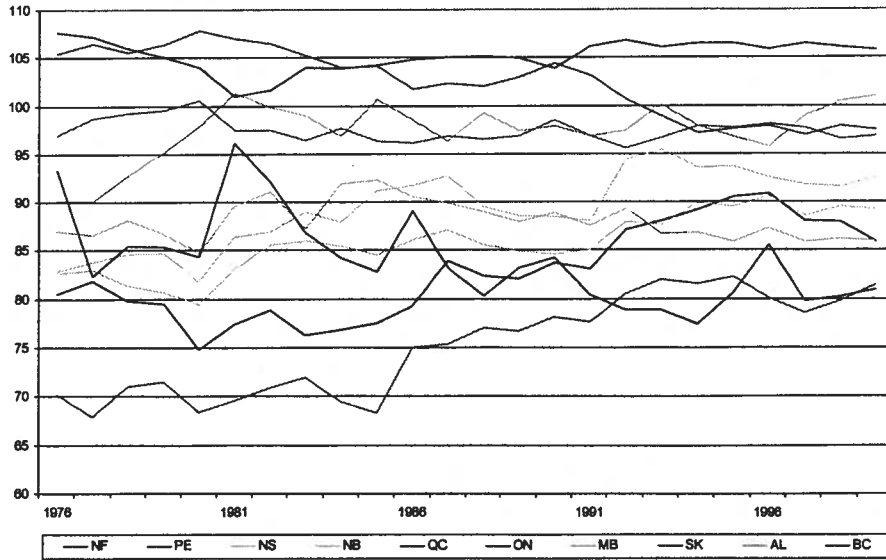
Demographic

Index of Labour Force per Capita, by Province 1976-99



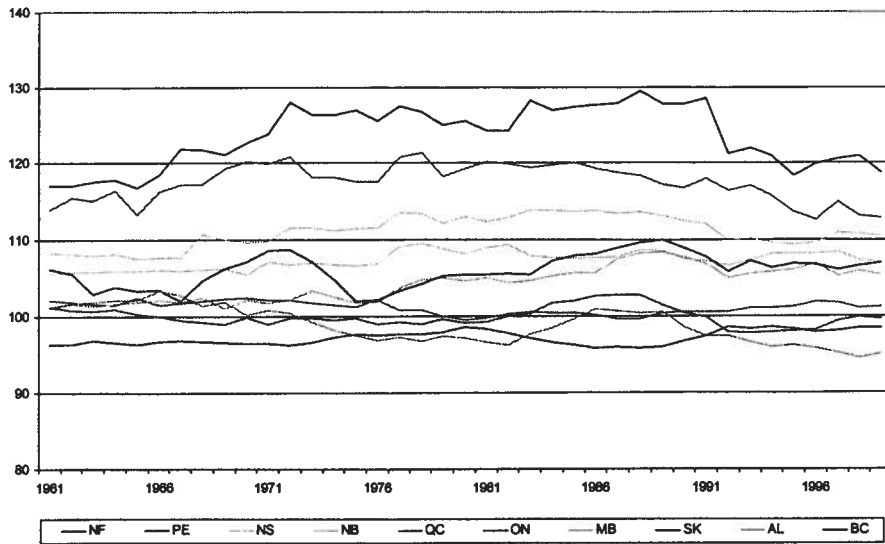
Economic Production

Index of Market Income per Employed Worker, by Province 1976-99



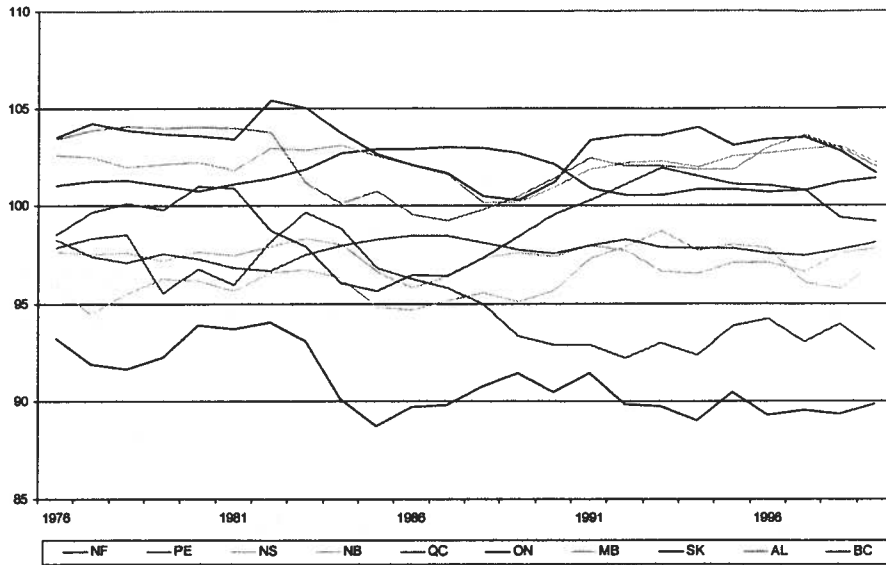
Redistributive Policies

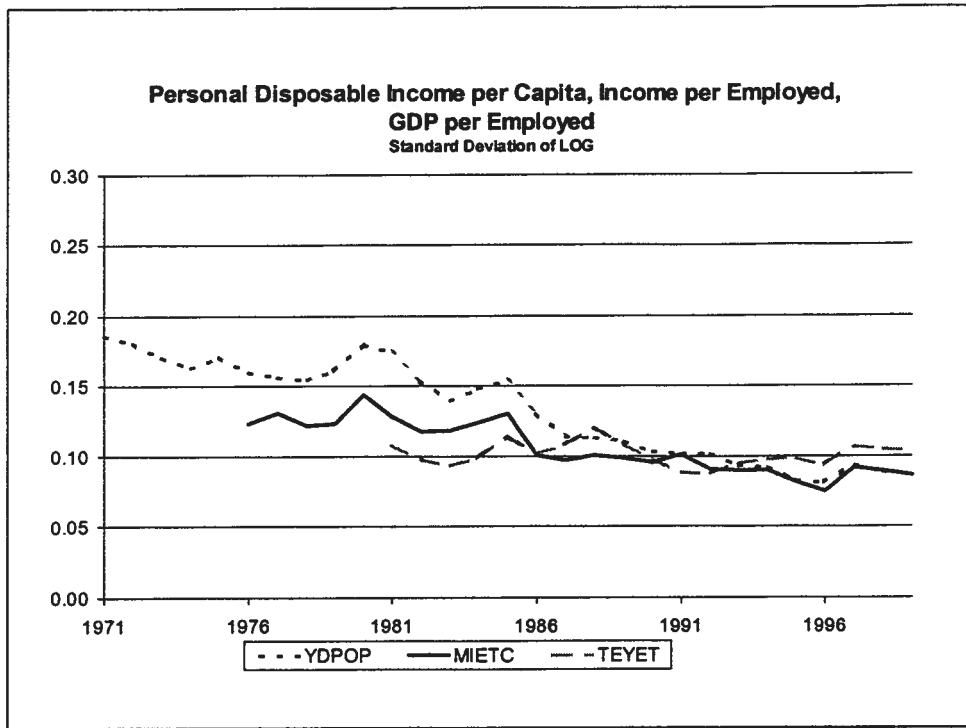
Index of Persons Disposable Income per Unit of Market Income, by Province
1961-99



Macroeconomic Performance

Index of Employment per Unit of Labour Force, by Province 1976-99





Following up on the analysis by Coulombe, the variance of several of the key measures shows convergence over time.

Regional Policies

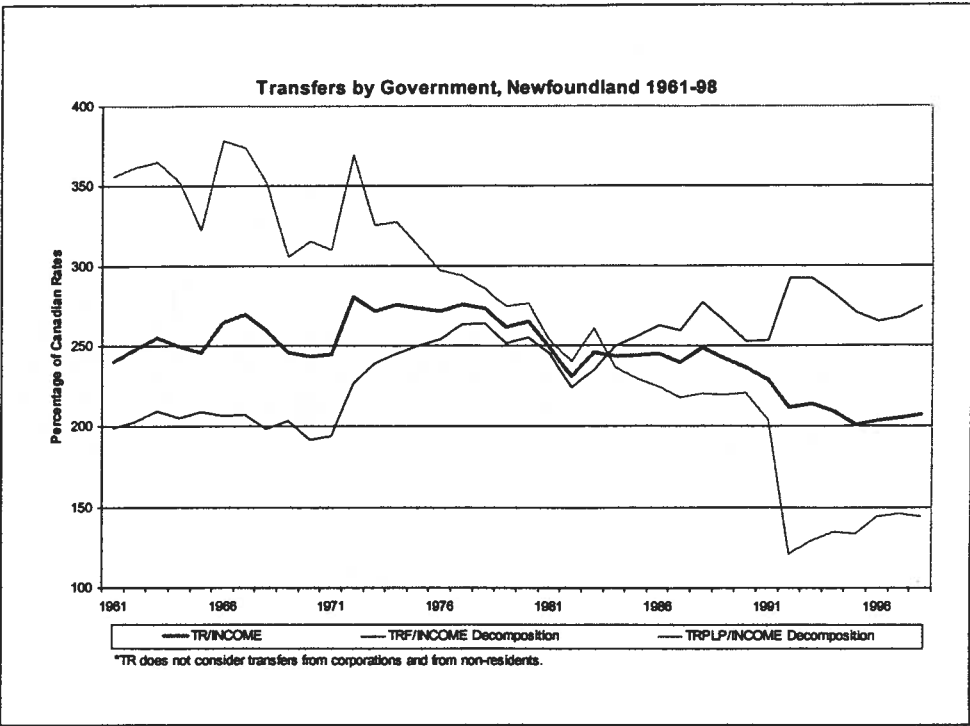
- **Relative Prices and Factor Mobility Challenge**
 - Right to a Job
 - Where you want to live
 - At a comparable wage to other regions
- **Development**
 - MOPs
 - PAILs
- **Full Employment**
- **Rural vs. Urban**

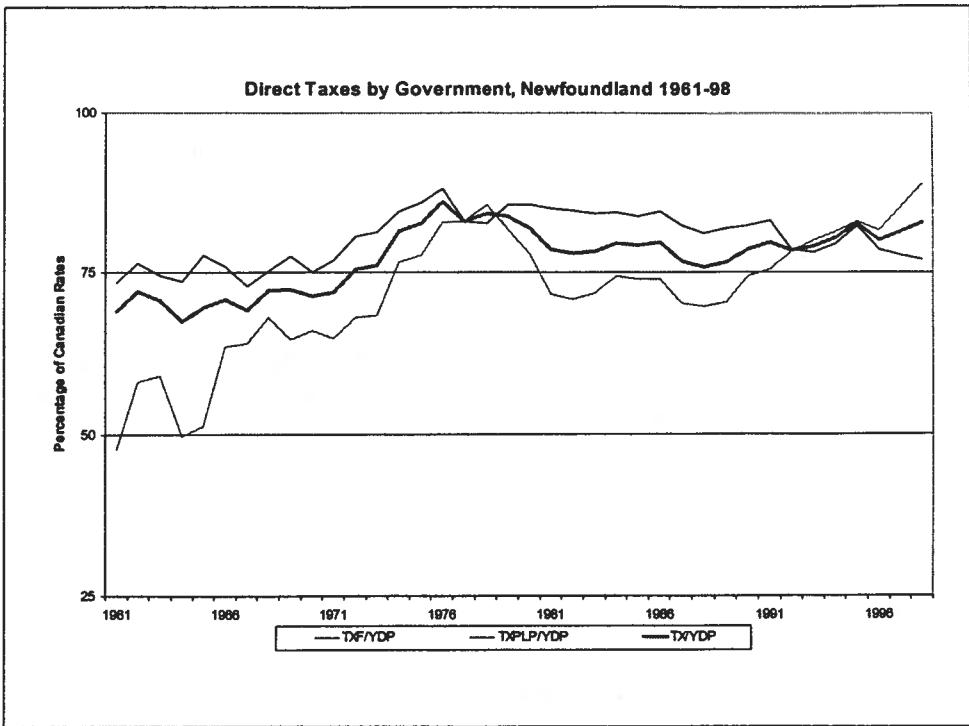
MOPs - Market-oriented policies, such as differential wages, removal of interprovincial barriers to trade and labour mobility

PAILs - programs to assist industry and labour - human resource development, capital market failures, innovation, physical infrastructure

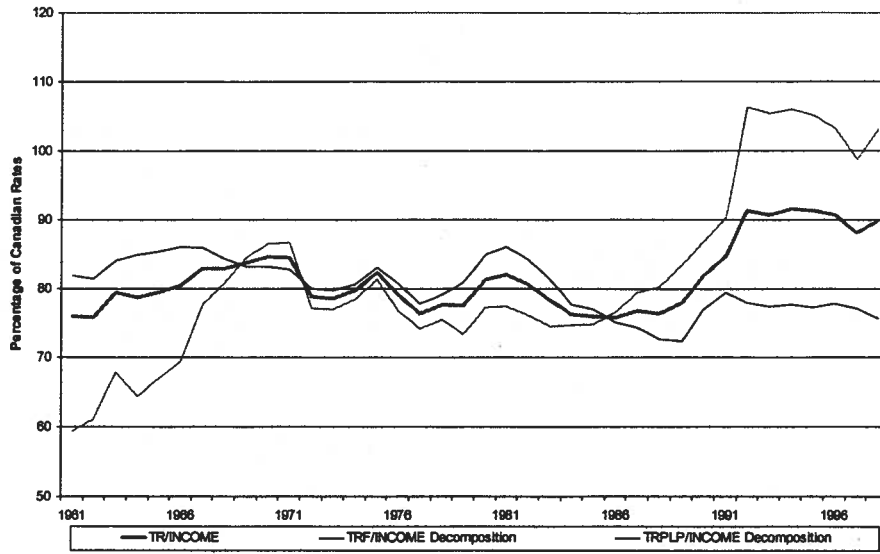
Provinces need to be encouraged further to take “risk” of improving performance, without losing equalization, etc. With new CHST the incentive to reduce welfare is high; every dollar accrues to province. But how they approach it can create problems elsewhere.

Pursuit of full employment, meaning less than 4% unemployment, with less than 1% in Prairies and Ontario, should be the objective.

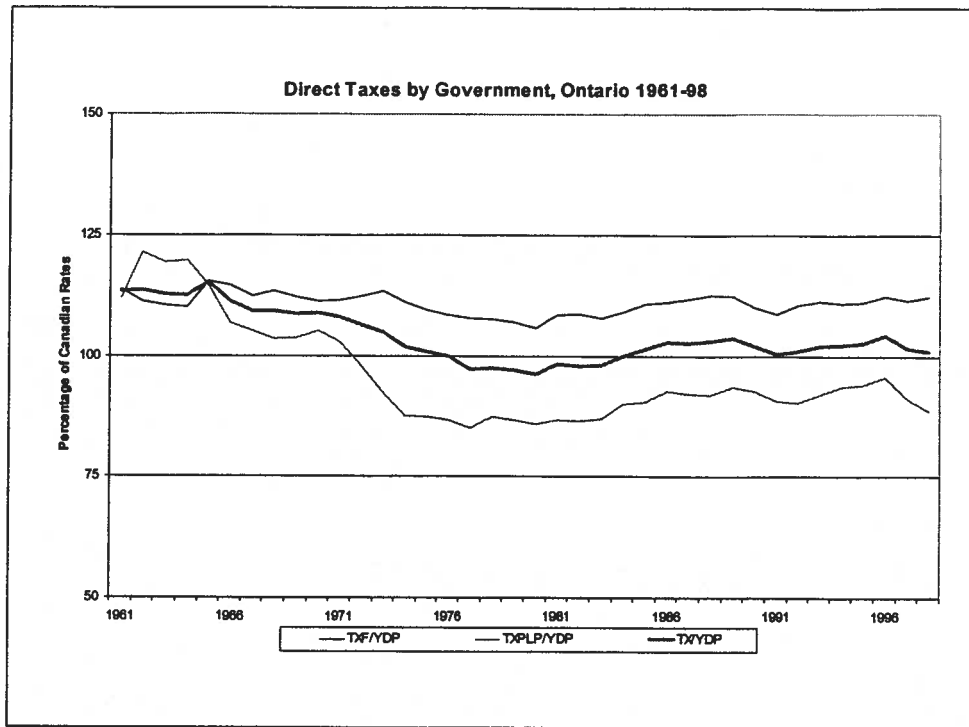




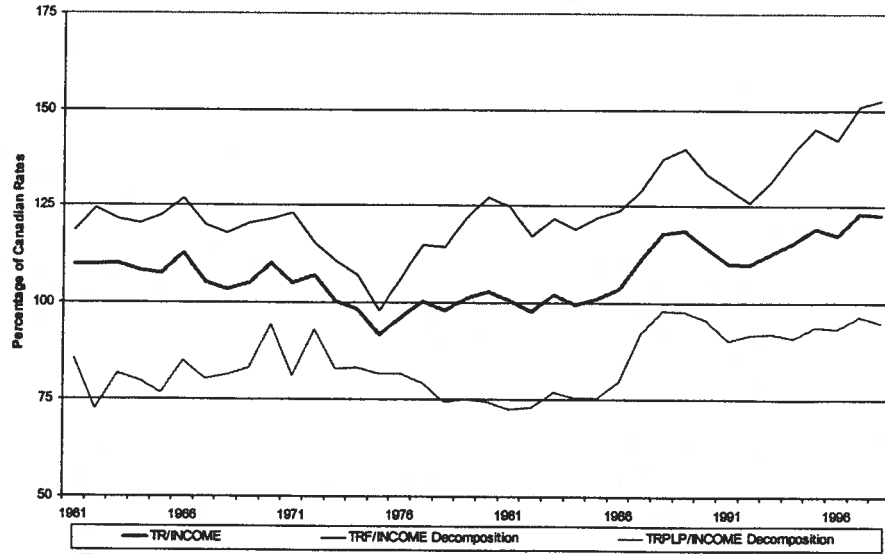
Transfers by Government, Ontario 1961-98



*TR does not consider transfers from corporations and from non-residents.



Transfers by Government, Manitoba 1961-88



*TR does not consider transfers from corporations and from non-residents.

