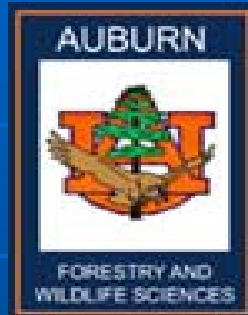


Bilateral FDI in the U.S. and Canada



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Introduction

- The U.S. and Canada are the biggest trading partners in forest products:
 - More than 70% of U.S. imports come from Canada
 - More than 23% of U.S. exports go to Canada
 - More than 85% of Canada's imports come from the U.S.
 - More than 74% of Canada's exports go to the U.S.
- Also the biggest partners in the FDI in the forest industry:
 - 76% of **outward** FDI from Canada goes to the U.S.
 - 46% of **outward** FDI from the U.S. goes to Canada
 - 64% of **inward** FDI to Canada comes from the U.S.

Objective

- To examine the trends, motivation and the determinants of bilateral FDI in the U.S. and Canada

Literature

- Ownership, Location, Internalization advantages (OLI paradigm):
 - Dunning (1988) and Rugman (1982)
- Examination of the FDI trends:
 - Pearse, Zhang & Leitch (1995)- Canada FDI
 - Zhang (1997)- US FDI
- Econometric analyses of FDI:
 - Uusivuori & Laaksonen-Craig (2001)
 - Laaksonen-Craig (2004)
 - Laaksonen-Craig & Uusivuori (2006)

Literature

- **Uusivuori & Laaksonen-Craig (2001)**
 - For the U.S. forest product exports and outward FDI have become full substitutes
 - For Finland and Sweden, exports affected outward FDI negatively
 - Strong dollar increased FDI from the U.S.
- **Laaksonen-Craig (2004)**
 - No causal relationship between FDI and GDP in developed countries (US and Canada)
 - Bi-directional causality between FDI and GDP in developing countries (Brazil and Chile)
- **Laaksonen-Craig & Uusivuori (2006)**
 - External R&D investments were substitutes for a firm's own R&D investments in 1980s, but not in 1990s.
 - No significant spill-over effects of R&D activities across firms

Literature

- However, **our analysis** of bilateral FDI in the U.S. and Canada gives results that are different from 2001 and 2004 studies
- Our analysis finds:
 - no relationship exists between:
 - (a) the imports or exports and FDI
 - (b) exchange rates and FDI
 - (c) interest rates and FDI

Literature

- Our analysis also finds:
 - positive relationship between:
 - (a) per capita GDP and FDI
 - (b) free-trade agreements and FDI
 - (c) per capita roundwood production and FDI
 - negative relationship between:
 - wage rates and FDI

Empirical model

- $FDI_{US} = f(\text{Exchange rate}_{CA}, \text{Imports}_{CA}, \text{Exports}_{CA}, \text{Per capita GDP}_{CA}, \text{Int Rate}_{CA}, \text{Wage rate}_{CA}, \text{Per capita roundwood prod}_{CA}, \text{FTA}) + e_{US}$
- $FDI_{CA} = f(\text{Exchange rate}_{US}, \text{Imports}_{US}, \text{Exports}_{US}, \text{Per capita GDP}_{US}, \text{Int Rate}_{US}, \text{Wage rate}_{US}, \text{Per capita roundwood prod}_{US}, \text{FTA}) + e_{CA}$

Empirical model

- Panel data analysis method
 - Fixed effects model and Random effects model;
 - Hausman's test for random effects is not significant, hence no significant difference between these two models
 - Park's method to correct for first-order auto-correlation
- Data for 24 years: 1983-2006
- All data are respective real dollars

Expected effects

- **Exchange rates:** a devaluation of Canadian dollar has a **positive** effect on inward FDI into Canada, and a **negative** effect on outward FDI from Canada; and vice versa on U.S.
- The effect of **exports and imports** is **ambiguous** on both inward and outward FDI (**In theory FDI and trade are substitutes, but most empirical evidence is that they are complements**)
- **Per capita income (GDP)** has a **positive** effect on FDI
- **Interest rates** have a **positive** effect on inward FDI into that country and **negative** effect on outward FDI from that country

Expected effects

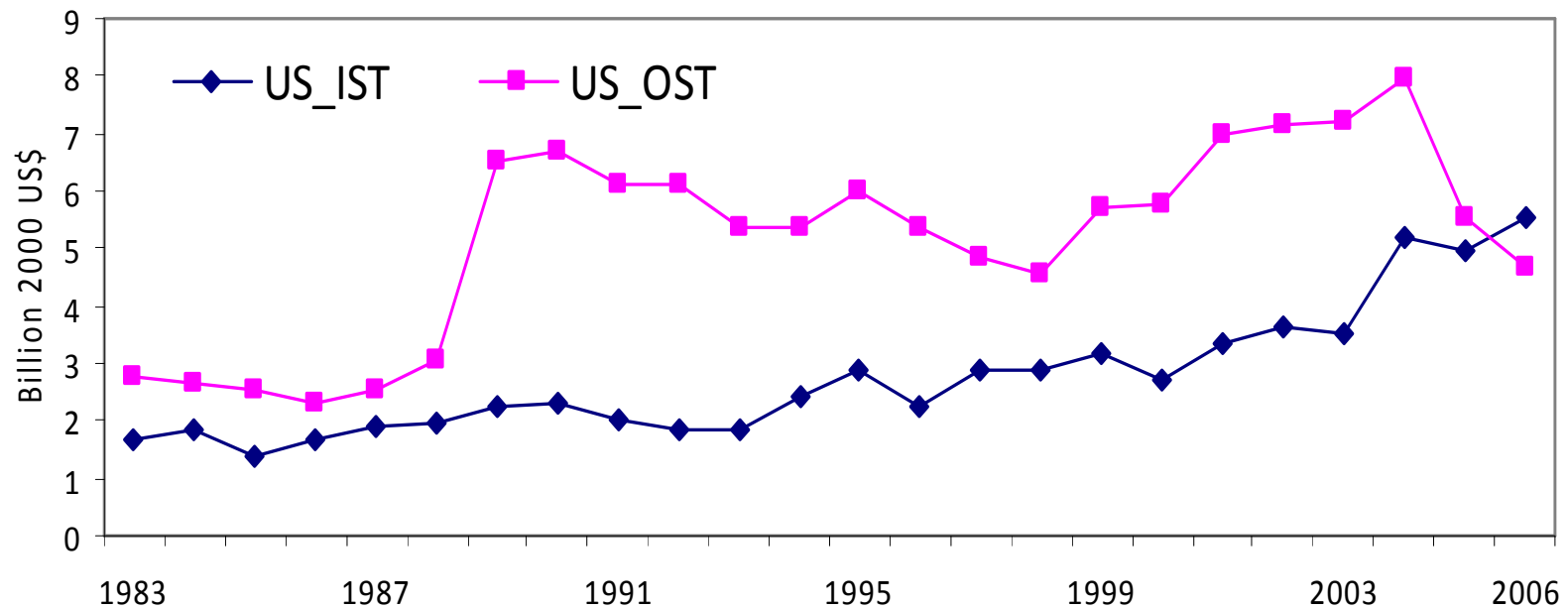
- **Per capita roundwood production** (as an indicator of forest resources) of the other country has a **positive** effect on the inward FDI into that country and may have a **negative** effect on the outward FDI from that country
- The other country's **wage rates** have a **negative** impact on the inward FDI and a **positive** impact on the outward FDI of that country
- **Free trade regime** has a **positive** effect on both inward and outward FDI

Expected effects: Summary

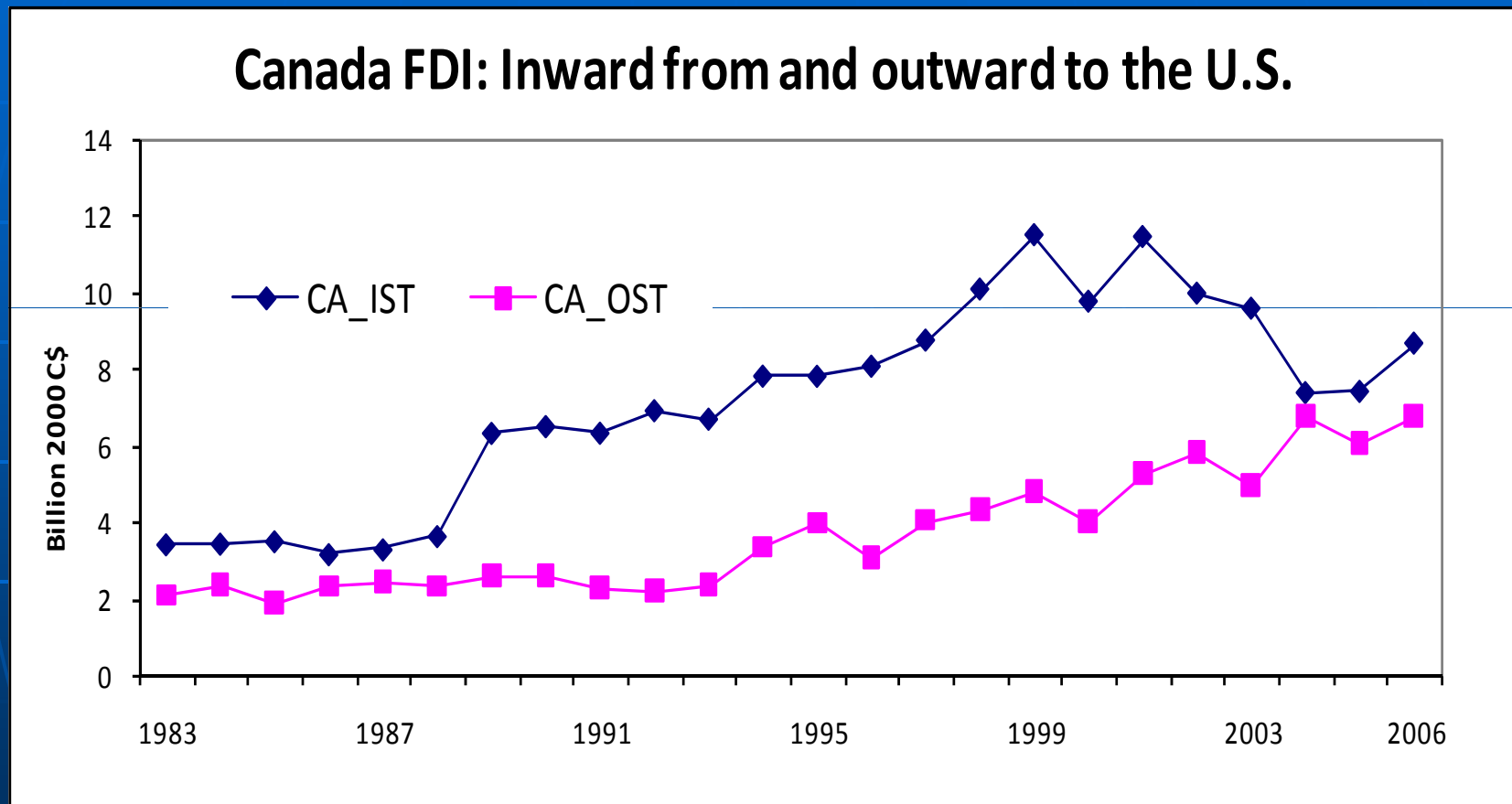
Variables of one country (Canada)	FDI into other country (US)	FDI from other country (US)
Exchange rate (devaluation)	-	+
Imports	?	?
Exports	?	?
Per-capita GDP	+	+
Interest rate	-	+
Wage rate	+	-
Per-capita roundwood prod	-	+
Free trade dummy (1989-2006)	+	+

U.S. FDI: from and to Canada

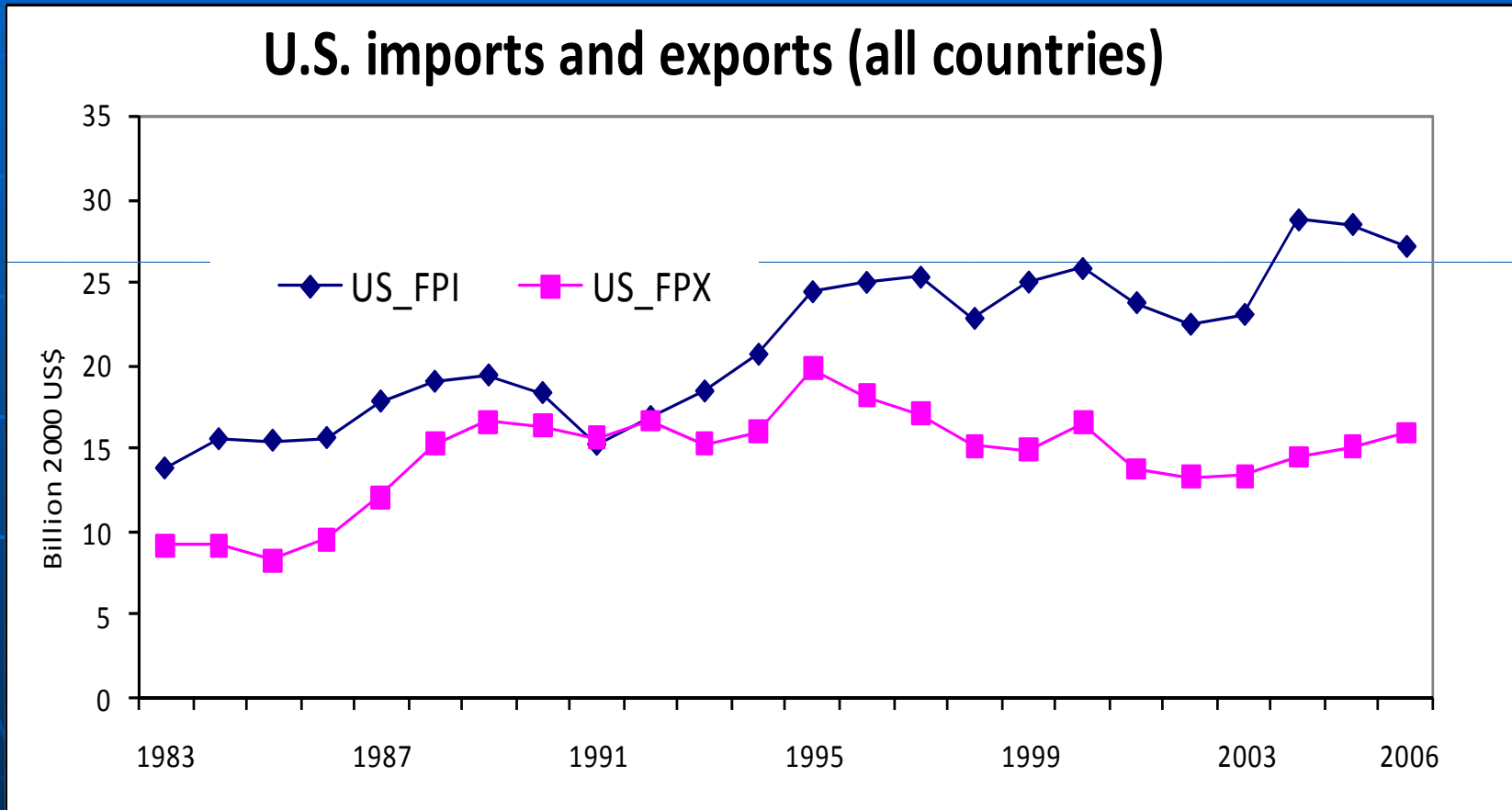
U.S. FDI: Inward from and outward to Canada



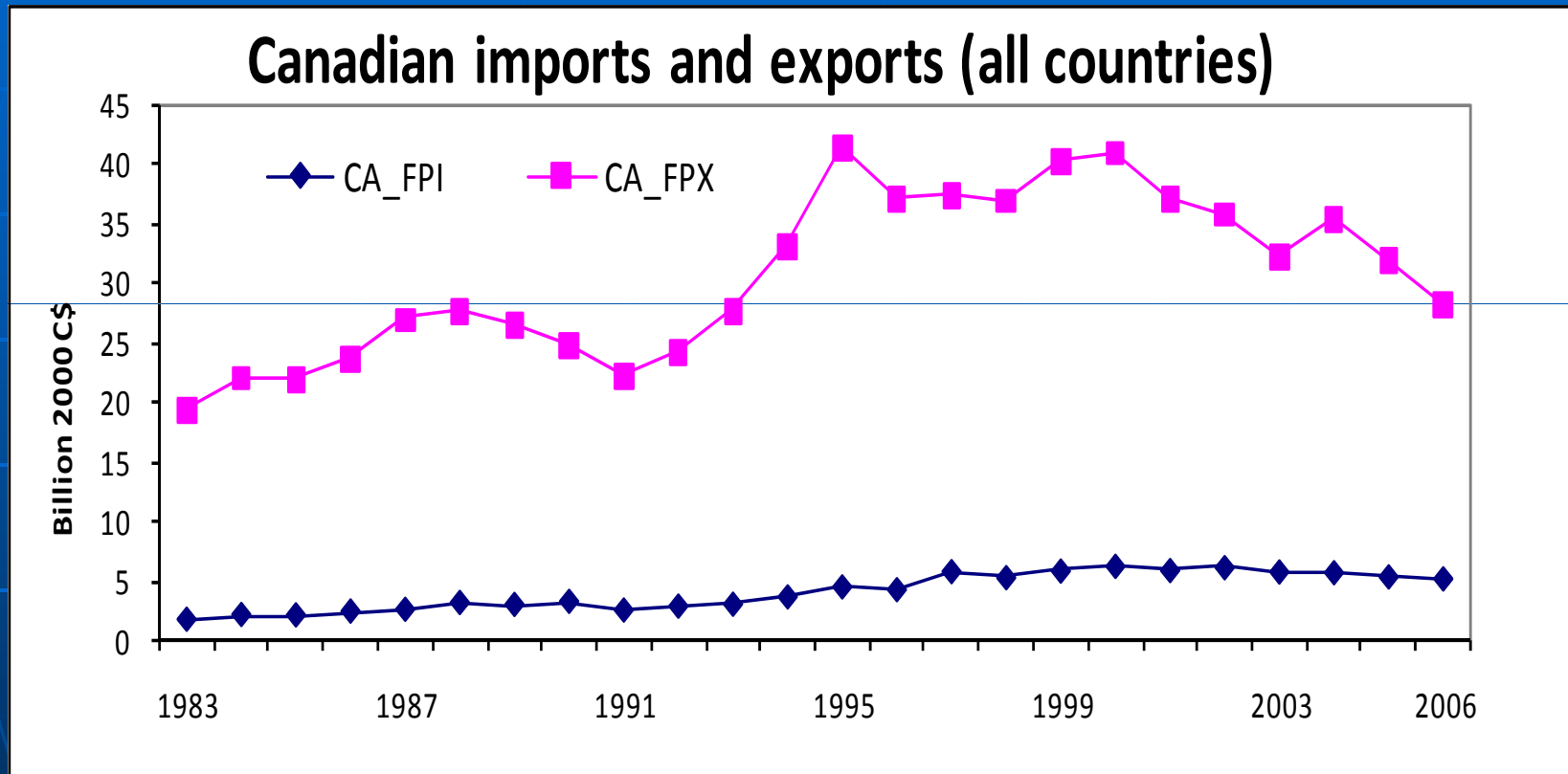
Canada FDI: from and to the U.S.



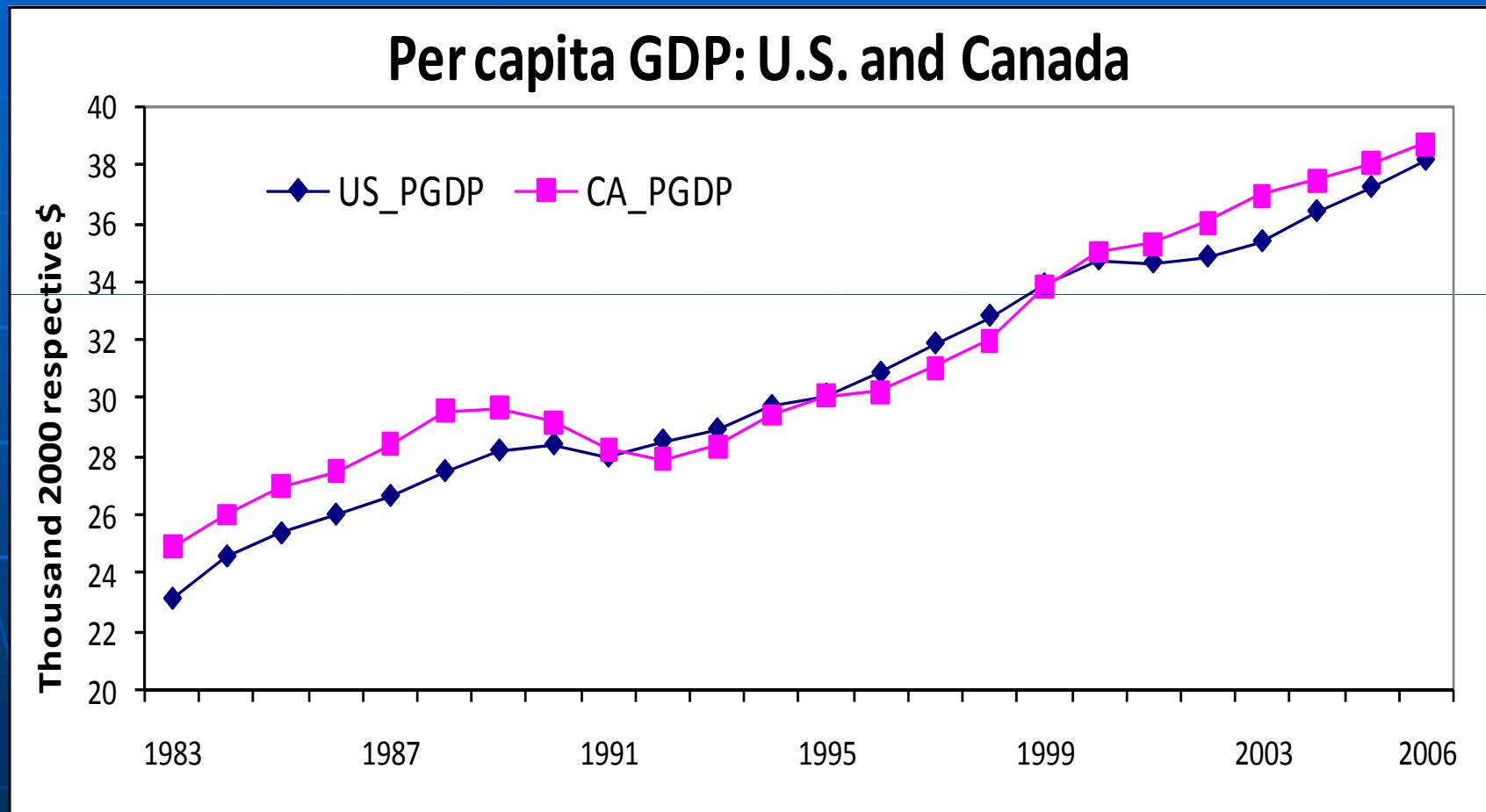
U.S.: imports and exports



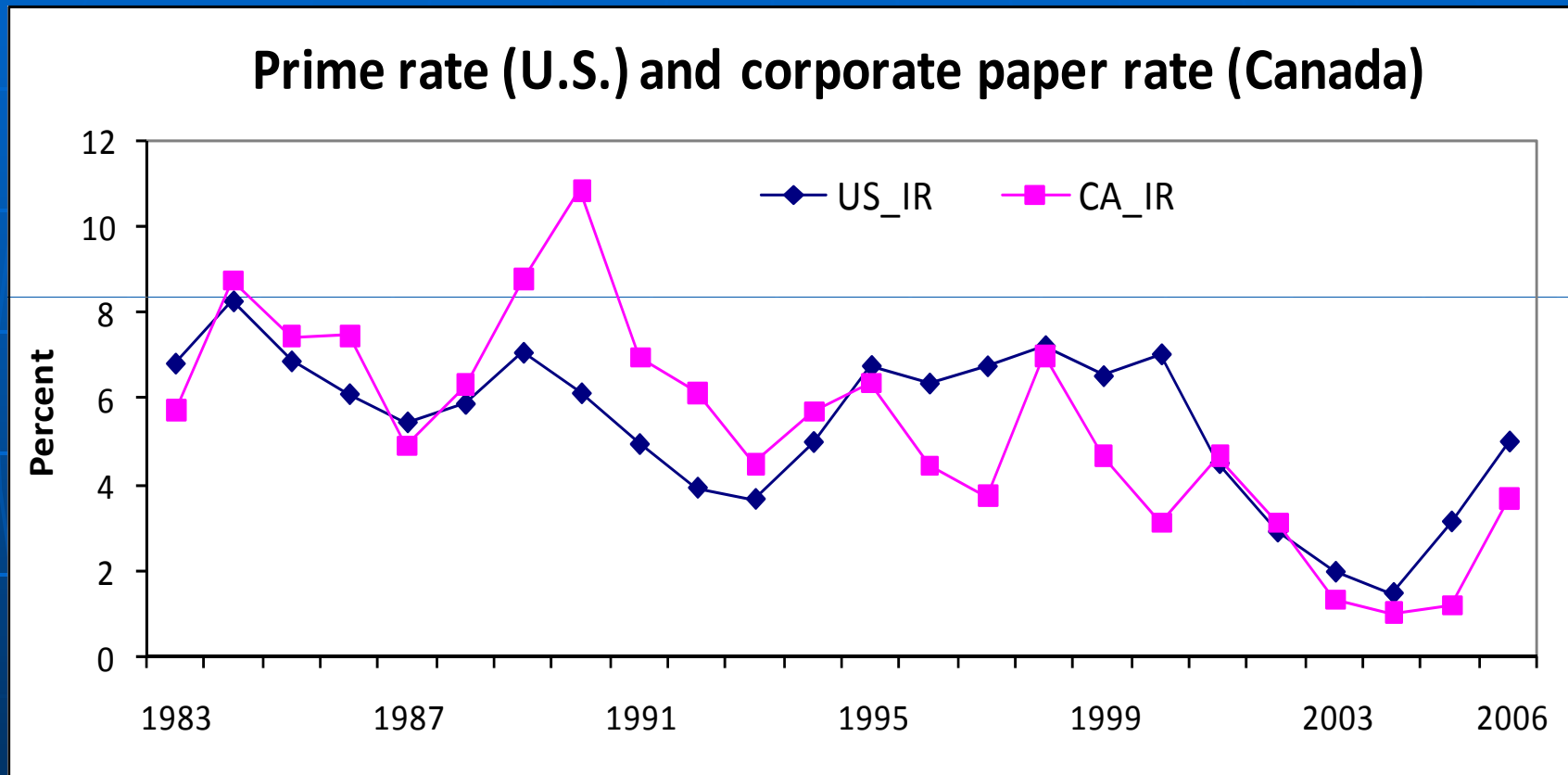
Canadian imports and exports



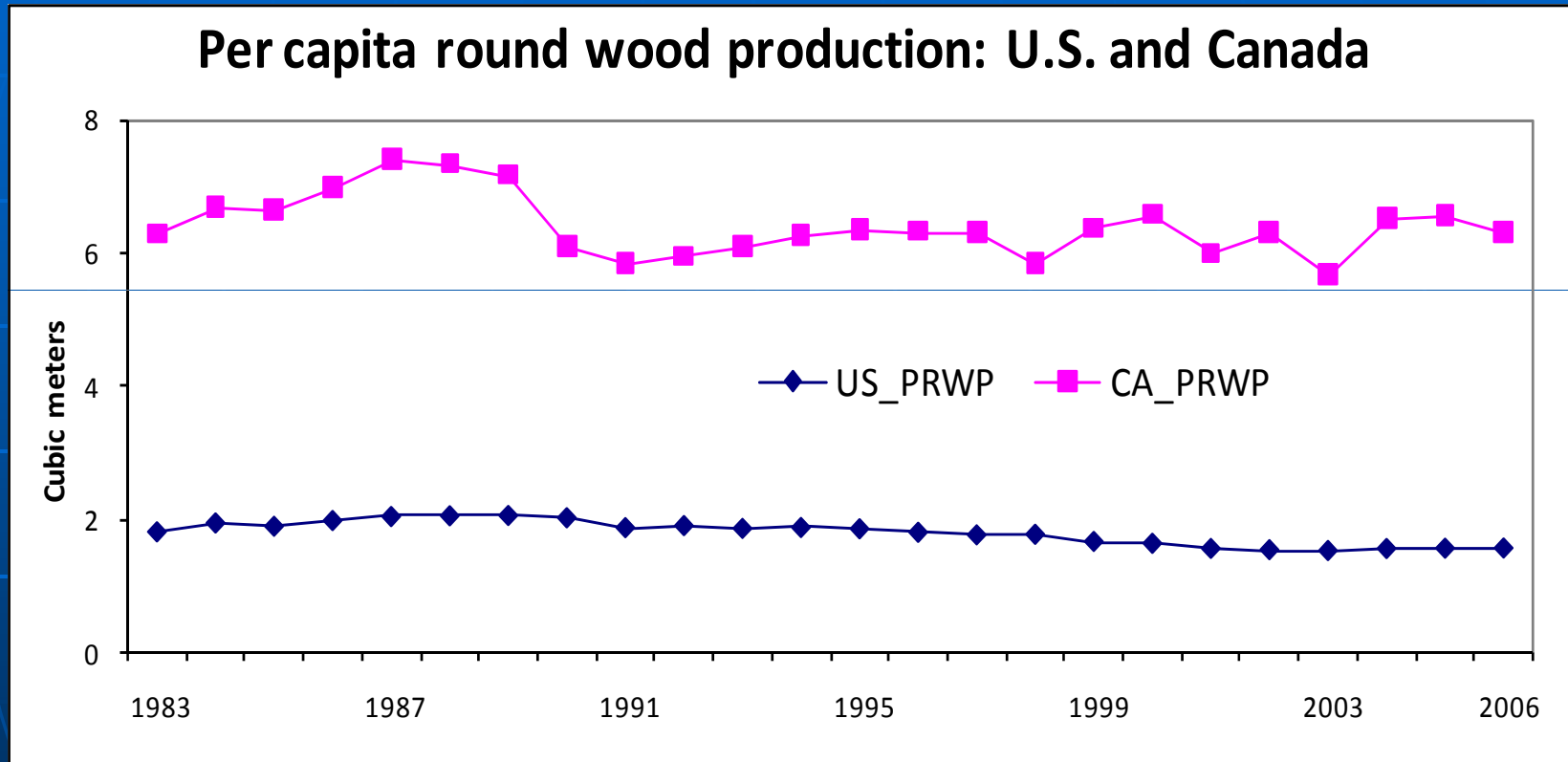
Per capita income



Interest rates

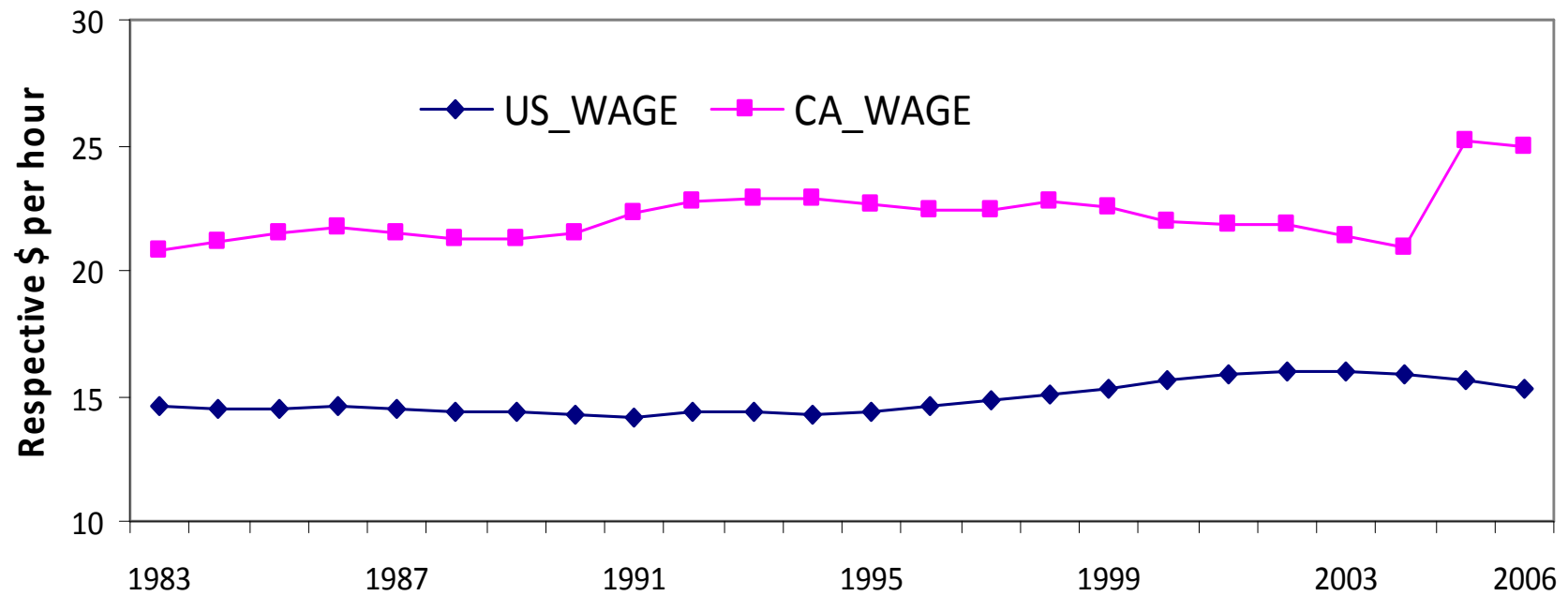


Per capita round wood production



Wage rates

Wage rates per hour: U.S. and Canada



Outward FDI: 1983-2006

Variable	Fixed effects		Random effects	
	Estimate	Std.Err	Estimate	Std.Err
Intercept	-	-	2.587	3.640
Exch. Rate	0.552	1.213	-0.549	1.960
Imports	-0.003	0.072	-0.037	0.082
Exports	-0.009	0.064	-0.002	0.065
PerCapita GDP	0.194 *	0.098	0.197 **	0.098
Interest Rate	0.015	0.067	0.007	0.068
Wage Rate	-0.328 **	0.139	-0.406 **	0.166
PerCapita RWP	0.582 *	0.329	0.576 *	0.327
Free Trade (D)	2.101 ***	0.499	2.189 ***	0.505
R-Square	0.88		0.51	

Our findings

- There is a positive relationship between per capita GDP and FDI (as expected)
- A negative relationship between the wage rates and FDI is observed (as expected)
- A positive effect of the free-trade agreements on FDI (as expected)
- A positive effect of per capita roundwood production on the FDI (as expected)

Our findings

- Our results are different from the previous (2001 and 2004) studies
- There seems to be no definite relationship between:
 - FDI and exchange rates is observed for the U.S. and Canada bilaterally
 - FDI and the forest product imports or exports for the U.S. and Canada bilaterally
 - Interest rates and FDI in the bilateral investments between the U.S. and Canada

Further research

- Examine these relationships using cointegration analysis techniques (long-run relationships)
- Extend the research to study the relationship between particular imports or exports of a country and its FDI
- Expand this study to other important countries involved in forest products trade and forestry FDI