Labor Market Reforms, Growth, Inequality, Labor Force Participation and Unemployment Rates: Evidence from a New Dataset

Nauro F. Campos and Jeffrey B. Nugent

Changes in Labor Regulations

- Extremely contentious and controversial

- Theoretical Models : Realistic Models so complicated that one can manipulate model to demonstrate many different coutcomes

- Empirical Models : Limited by dearth of quantification and multidimensionality of the regulations, especially across countries outside the OECD and over time prior to 1998

Given infrequency of changes in labor laws and regulations

- Difficult to Analyze very carefully either

  Determinants of changes in Regulations

  or

  Effects of changes in these Regulations

Purpose of this study:

  Take advantage of a newly created panel data set on overall rigidity of labor regulations

Step 1. Create LAMRIG a New Unbalanced Panel Data Index of Rigidity in Regs.

- LAMRIG created by extending the index created by Botero et al 2004 for 1997-9 backwards and forwards so as to cover 1960-2004 for as many as 145 countries

- It is an index of **de jure** regulations and largely limited to regulations on hiring, firing, cost of dismissal and hours of work.

2. Apply it to Examine Effects of LAMRIG on:

- **Freeman Conjecture Outcomes**
  - Growth Rates over 5 year periods
  - Income Inequality
- **Other Outcomes**
  - Labor Force Participation Rates
  - Unemployment Rates

Part 1: towards a new measure

- Extend Botero, Djankov, La Porta, Lopez-de-Silanes and Shleifer *QJE* 2004 *EPL* index

- 85 countries in year 1997… we extend it to many more countries (145)

- extend it <u>backwards</u> in time to at least 1960 where possible (and <u>forward</u> to 2000-4)

- Using the Labor Laws and other Regulations from ILO's NATLEX as

- For OECD countries rely also on quite similar earlier aggregations of annual indexes over time by Allard and OECD

Botero et al EPL

Employment law index: Dimensions

i. Alternative employment contracts
ii. Cost of increasing hours worked
iii. Cost of firing workers
iv. Dismissal procedures

Extending the cross-section

- From NATLEX, compile relevant labour law information (4 components) for 140+ countries

- Code NATLEX into an extended EPL for 1997 (which we call **LAMRIG**)

- LAMRIG back to 1950 extend 2004 (5 yr avgs)

- Range [0,2.5]: higher is more rigid/less flex

Part 2
How reliable (sensible) is this new measure and how important are changes over time ? Portugal –New Zealand Comparison

Figure 1. Rigidity of Employment Protection Legislation:
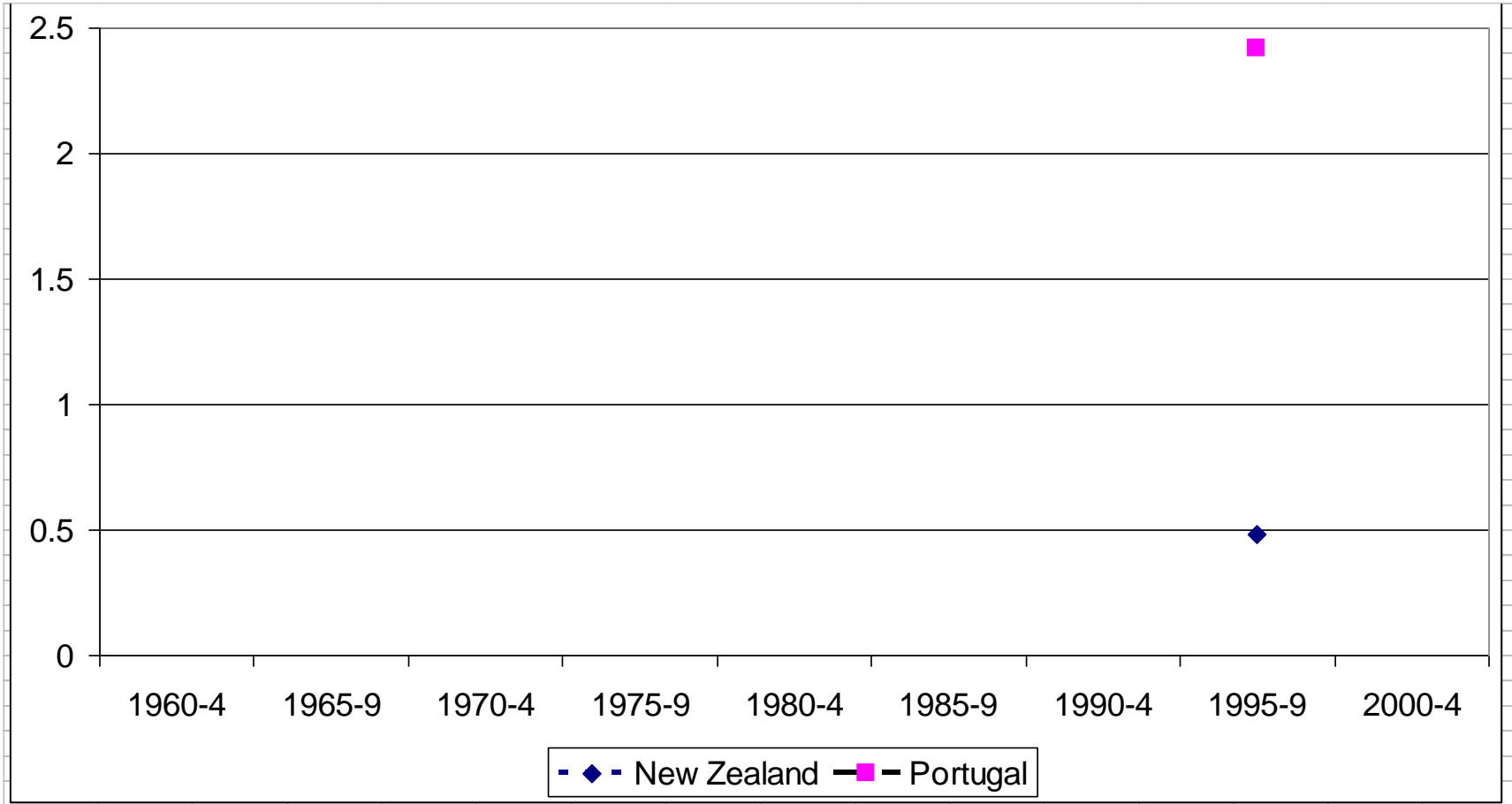## New Zealand and Portugal (Botero et al QJE 2004)

Figure 2. LAMRIG across New Zealand and Portugal since 1960

	New Zealand	Portugal
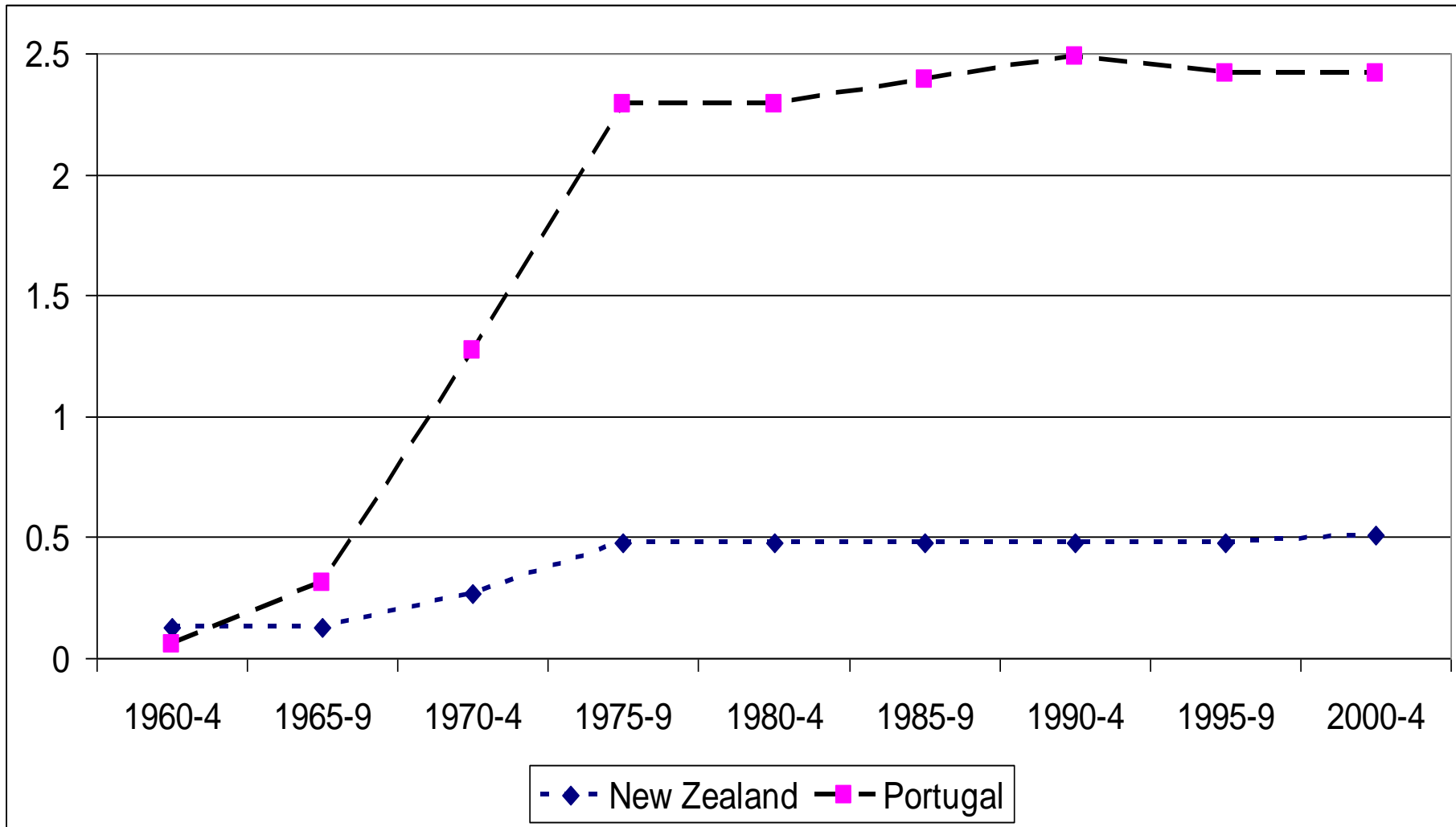
Determinants: What drives LAMRIG?

Botero et al evaluate efficiency, political, and legal origins explanations

We extend these

- Structural factors

- Political factors

- Economic crises

- Other reforms

Findings

1.We still found support for some influence of Legal origins in larger cross section of 145 countries

2. But to a much more limited extent over time with model below: More important factors: level of logGDPPC, BMP, Lag Trade Reform, U lagged 5 years

- $$\Delta LAMRIG_{it} = \alpha + \beta_1 \Delta LAMRIG_{i,t-1} + \beta_2 GDP_{it} + \beta_3 LO_i + \beta_4 X_{i,t-1} + \varepsilon_{it}$$

Part 3. Examining the Effects

- A. Freeman Conjecture
  - **Growth**
  - **Income Inequality**
- B. Labor Force Particiapation Rates
- C. Unemployment Rates

A. What is the Freeman Conjecture?

"The evidence shows that labor institutions reduce the dispersion of earnings and income inequality, which alters incentives, but finds equivocal effects on other aggregate outcomes, such as employment and unemployment."

This quote is from Richard FREEMAN's chapter in the Sage Handbook of Industrial Relations, see also chapter in Handbook of Development Economics

Baseline specifications

Inequality =   lag inequality, per capita GDP,
             per capita GDP2, human capital,
             govt expenditure, ELF, (LAMRIG)

Growth/N = initial per capita GDP, investment,
             human capital, govt expenditure,
             ELF, (LAMRIG)

	Income inequality (Gini coefficient)			Per capita GDP growth rates		
	(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
Lag gini	0.693*** [0.0652]	0.734*** [0.0647]	0.557*** [0.0783]			
Log per capita GDP	0.106 [0.461]	-6.289 [4.992]	-6.955 [4.813]			
Log per capita GDP Squared		0.421 [0.294]	0.370 [0.287]			
LAMRIG	-2.353** [1.079]	-2.966** [1.279]	-3.195*** [1.195]	-0.413** [0.183]	0.204 [0.172]	0.165 [0.160]
Log Human Capital		0.443 [2.208]	4.310⁺ [2.359]		0.398 [0.388]	-0.0270 [0.369]
Government share of GDP			0.0311 [0.0373]		-0.0158 [0.0117]	-0.0135 [0.0116]
Ethnic fractionalization			36.91*** [11.42]		-1.263** [0.536]	-0.887* [0.533]
Initial per capita GDP				-0.390*** [0.111]	-1.010*** [0.190]	-0.872*** [0.178]
Investment					0.0862*** [0.0212]	0.0659*** [0.0184]
Africa dummy						-1.410*** [0.523]
Latin America dummy						-0.588* [0.357]
Asia dummy						1.469*** [0.393]
Constant	15.31*** [5.494]	51.57*** [16.54]	31.85* [18.30]	4.474*** [0.854]	7.142*** [1.205]	7.179*** [1.161]
Observations	560	560	458	791	641	641
Number of countries	123	123	85	134	92	92

Notes: The dependent variable in columns 1-3 is the Gini coefficient for income inequality (source is the UNU/WIDER database), while the dependent variable in columns 4 to 6 is the growth rate of per capita GDP (source is PWT 6.2). LAMRIG is our Index of Labor Market Legislation Rigidity. Log per capita GDP is from the Penn World Tables 6.2. Results are reported for an unbalanced panel between 1960 and 2005 (non-overlapping 5-year averages), *** denotes statistically significant at 1%, ** at 5% and * at 10%.

B. Effects on Labor Force Participation and Unemployment Rates

In Both Cases we also examine the effects on Youths and Overall and in each case also by gender

Some at least suggestive results of effects of LAMRIG lagged 5 years

Clearly much more research needed!!

Table 3 YOUTH LABOR FORCE PARTICIPATION	Total Youth Participation Rate	Female Youth Participation Rate	Male Youth Participation Rate
VARIABLES			
Lag loggdp	-2.108***	-1.469**	-3.240***
	[0.497]	[0.570]	[0.604]
Lag LAMRIG	**1.572**	**0.402**	**3.184****
	[1.305]	**[1.546]**	**[1.361]**
Lag Total Youth Part.Rate	0.538***		
	[0.0484]		
Lag Female Youth Part. Rate		0.511***	
		[0.0450]	
Lag Male Youth Part. Rate			0.450***
			[0.0527]
Constant	38.06***	32.54***	53.40***
	[5.070]	[4.778]	[6.957]
Observations	443	443	443
R-squared	0.379	0.312	0.428
Number of country	141	141	141

Table 3	Total Youth Unemployment Rate	Female Youth Unemployment Rate	Male Youth Unemployment Rate
VARIABLES			
Lag loggdp	-0.230	-0.571	0.590
	[0.859]	[0.999]	[0.724]
Lag LAMRIG	**3.022**	**3.687**	**2.868***
	[1.925]	[2.251]	[1.616]
Lag Total Youth Unemployment Rate	0.120*		
	[0.0685]		
Lag Female Youth Unemployment Rate		0.0830	
		[0.0659]	
Lag Male Youth Unemployment Rate			0.113
			[0.0693]

Table 3	Female Participation Rate	Female Unemployment Rate	Male Participation Rate	Male Unemployment Rate
VARIABLES				
Lag loggdp	5.309***	0.167	3.559***	0.368
	[0.753]	[0.418]	[0.746]	[0.265]
Lag LAMRIG	**1.904**	**1.810****	**1.797**	**1.711*** **
	[1.592]	**[0.836]**	**[1.731]**	**[0.522]**
Lag Female Participation Rate	0.343***			
	[0.0405]			
Lag Female Unemployment Rate		0.256***		
		[0.0438]		
Lag Male Participation Rate			0.0628	
			[0.0413]	
Lag Male Unemployment Rate				0.229***
				[0.0460]
Constant	-15.39***	3.710	38.07***	0.258
	[5.096]	[3.029]	[5.411]	[1.910]
Observations	528	461	528	458
R-squared	0.467	0.137	0.109	0.177
Number of country	144	143	143	142

Table 4 (Continued) Female Participation Rate

	(1)	(2)
Log GDP	-9.414***	-8.233***
Gov share of GDP	-0.010	0.007
Civil War Intensity	-0.429	-0.399
Average Schooling year	-0.024	0.396
LAMRIG	**5.221***	
Lag LAMRIG		**3.517***
Constant	110.649***	75.769***
Observations	471	435
R2	0.660	0.638
Adj R2	0.562	0.524
(P>chi2)	0.000	0.000
Model	Fixed Effect	Fixed Effect

Summary of Findings of lag LAMRIG

1. Created an Index of EPL that has better coverage across countries and over time

2. Applied it to determinants: consistent with Botero et al 2004 across countries but finds new ones over time: GDPPC, U rate, BMP, Lag Trade Reform

3. Effects: Supports Freeman Conjecture :Reduces Inequality, no consistent effect on growth

4. Raises LFPR of females as a whole and possibly of male youths

5. But May Raise Unemp. rate 5 years later

Qualifications, Future Research

- Results presented largely illustrative, robustness
- Since LAMRIG is **de facto** only, extend existing measures of enforcement to employ jointly
- Since there seem to be **positive and negative** effects, disaggregate LAMRIG into its components to help identify optimal combinations of regs.
- Convert to annual indexes to get at dynamics
- Compare with other kinds of labor indexes, such as labor rights, unemployment costs
- Extend to additional effects: well being indicators, ability to work hard, productivity and training

Thank you very much