

(V) The Regulation of Working Hours

Bocconi University, April 2009

What are we talking about?

- May 1, 1886 → day of strikes in the US for the introduction of eight-hour working day
- May 1 → Labor Day
- Historical trends: working hours per week declining; working weeks per year declining
- Part-time labor
- Regulation of working hours as quantity-based institution

Outline

1. Measures and cross-country comparison
2. Theory
 - Regulating working hours
 - Regulating part-time work
3. Empirical evidence
4. Policy issues

Measures

- Intensive margin of labor supply: average working hours per week
- Legal restrictions:
 - Normal working week
 - Maximum number of overtime hours
 - Overtime premium
- Bargained normal hours
- Share of part-time work in total employment

Cross-country comparison

- In many countries, normal working week is 40 hours
- Wide variation in maximum weekly overtime hours: 2 (Spain) – 16 (Switzerland)
- Also wide variation in maximum total working hours
- Overtime premiums mostly 25-50%, but sometimes 100%
- Normal weekly hours set by collective bargaining, often substantially lower than legal maximum

Table 5.1: Legislative limits on normal weekly hours of work and overtime work

	Legal maxima on working hours			Bargained	Wage premium
	Normal Hours	Overtime Hours	Maximum Hours	Normal Hours	Overtime Hours (%)
Australia	38-40	none	none	35-40	50
Austria	40	5	50	36-40	50
Belgium	40	10	50	38	50
Canada	40-48	none	none	35-40	50
Czech Republic	40.5	8	51	–	25
Denmark	37	none	48	37	50
Finland	40	5	45	37.5-40	50
France	39	9	48	39	25
Germany	48	12	60	35-39	25
Greece	40	8	48	40	25
Hungary	40	12	52	–	50
Ireland	48	12	60	38-40	25
Italy	48	12	60	36-40	10
Japan	40	none	none	40-44	25
Korea	44	12	56	–	50
Luxembourg	40	8	48	40	25-50
Mexico	48	9	57	–	100
Netherlands	45	15	60	36-40	–
New Zealand	40	none	none	40	–
Norway	40	10	50	37.5	40
Portugal	40	12	54	35-44	50
Spain	40	2	47	38-40	–
Sweden	40	12	52	40	–
Switzerland	45 or 50	16	61 or 66	40-42	25
Turkey	45	–	–	–	50
United Kingdom	none	none	none	34-40	–
United States	40	none	none	35-40	50

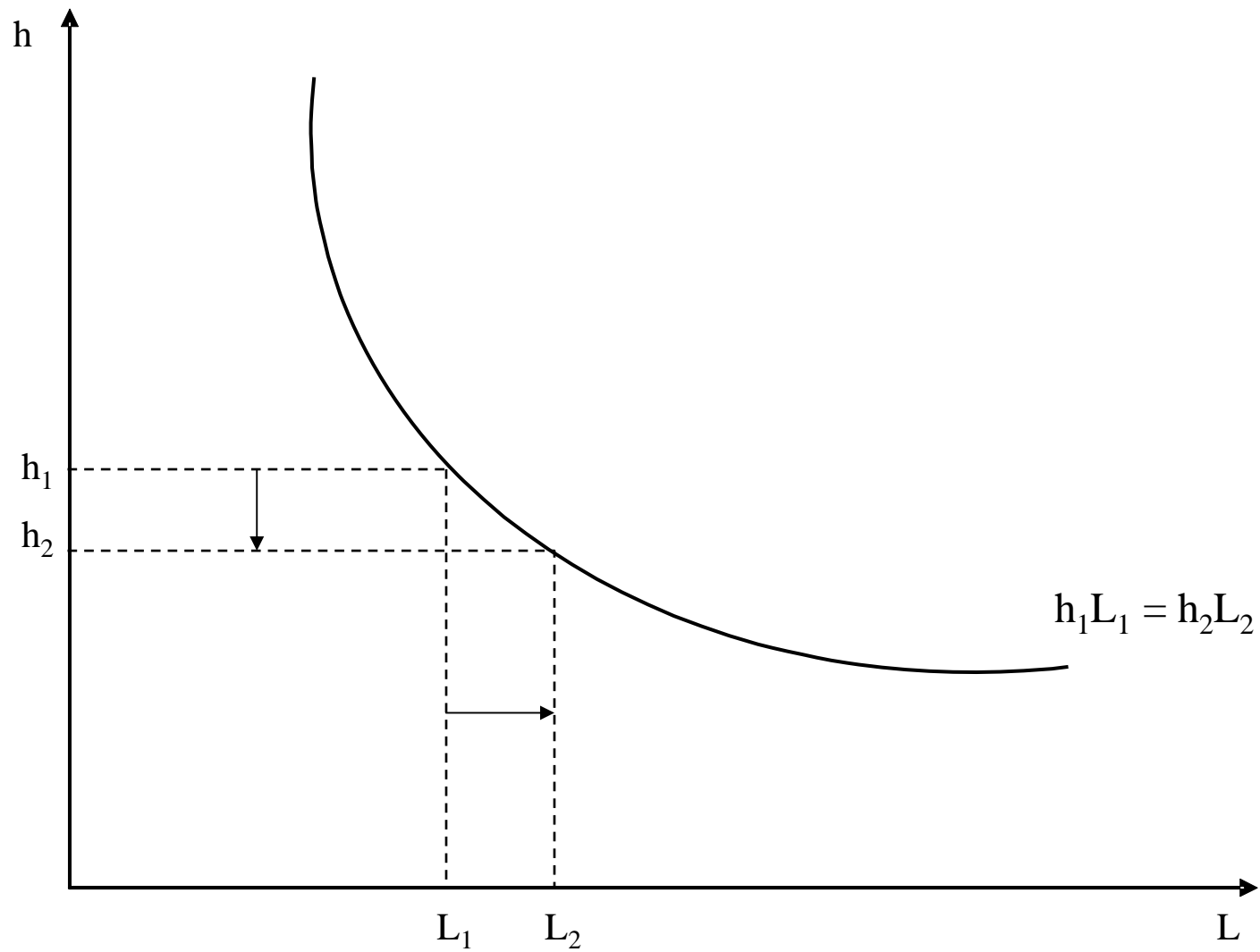
Theory

Important ingredients:

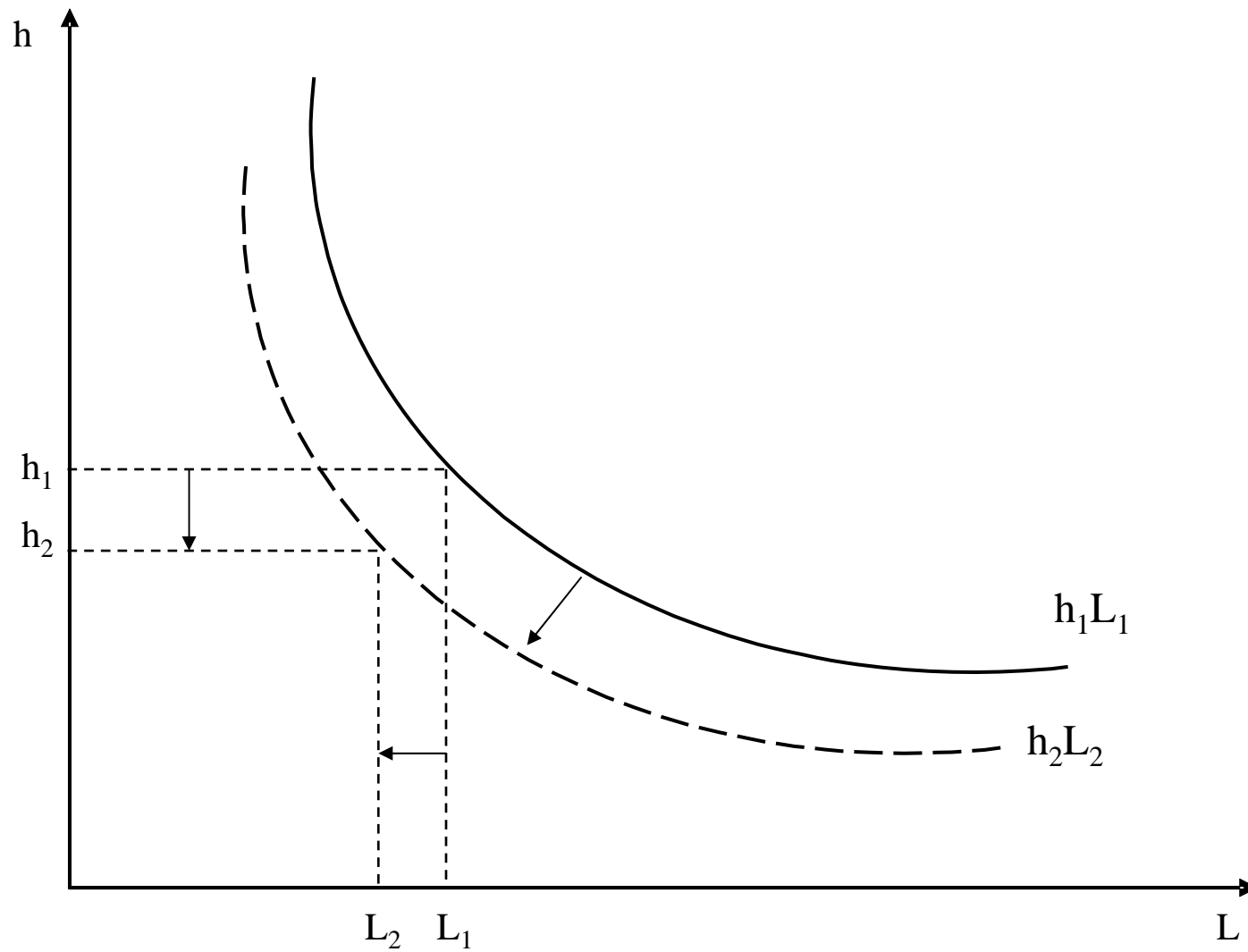
- Choice of number of hours on the basis of the hourly wage rate and preferences for leisure versus income
- Choice of working hours often restricted to a limited set, most commonly full-time, part-time and no-time

Theory (1) – regulating working hours

- Shorter working hours → less unemployment?
- Lump of labor (first graph)
- But (second graph), iso-hours curve may shift because of:
 - Increase in hourly wage
 - Fixed costs per worker
 - Constant nonproductive time
 - Decrease in capital utilization



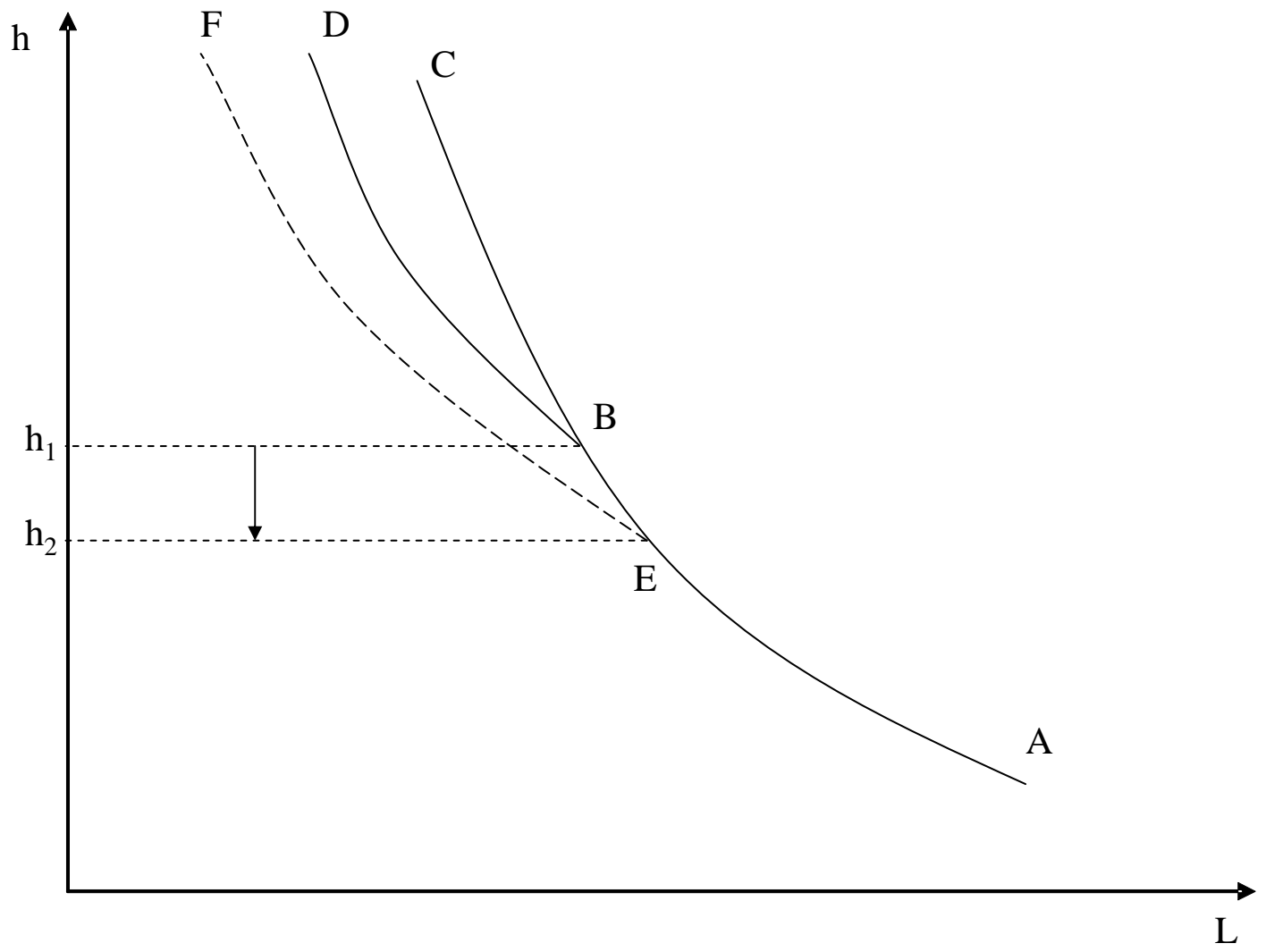
Source: Tito Boeri and Jan van Ours (2008), *The Economics of Imperfect Labor Markets*, Princeton University Press.



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Working hours and wage costs

- If overtime hours pay a higher wage: iso-wage-cost curve no longer equivalent to iso-hours curve
- Kink in iso-wage-cost curve (see next graph)



Source: Tito Boeri and Jan van Ours (2008), *The Economics of Imperfect Labor Markets*, Princeton University Press.

Mandatory work reduction and employment – Constant hourly wage

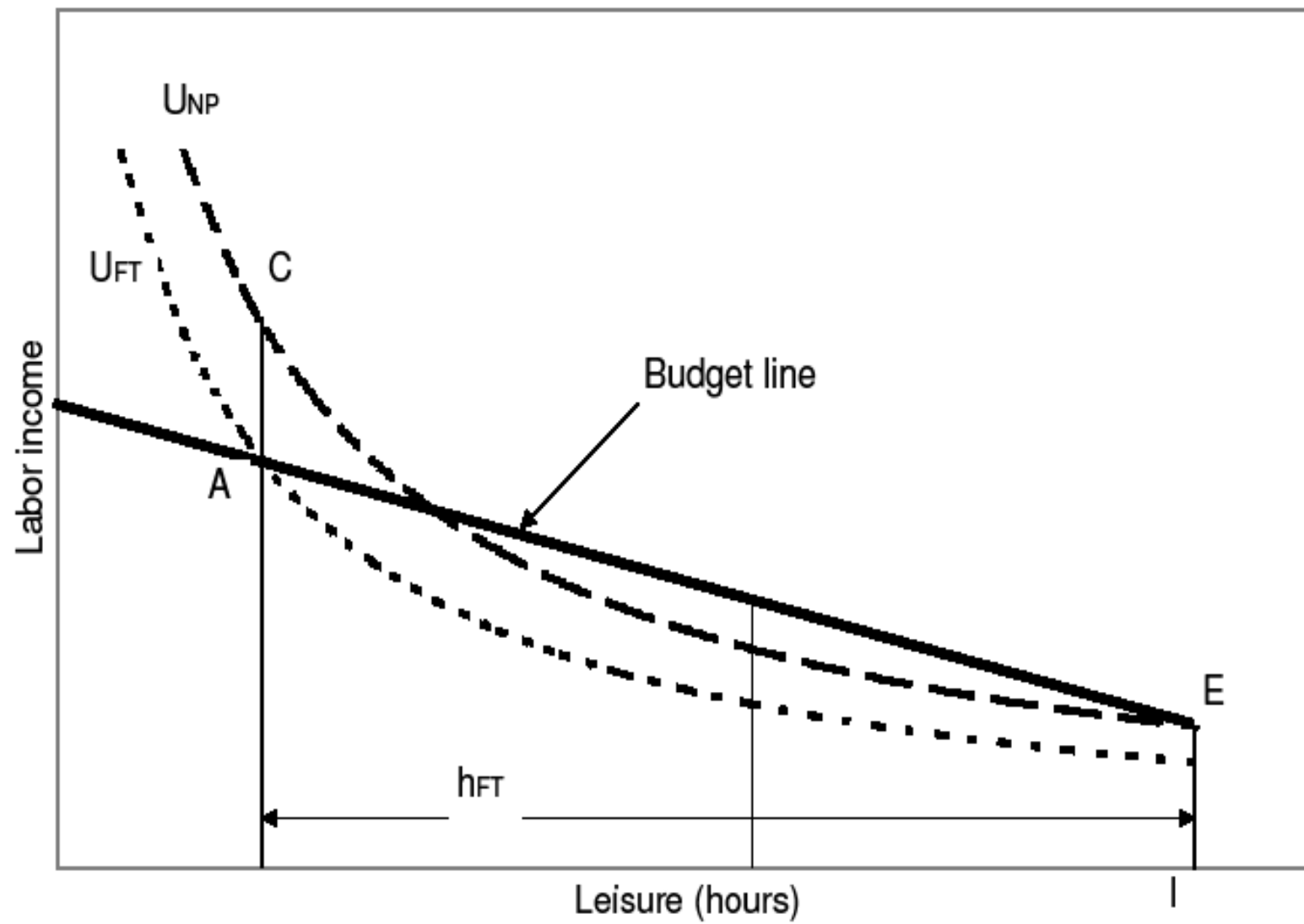
- If $H > T$: $C = [WT + (1+x)W(H-T) + Z]N$
- If $H < T$: $C = [WH + Z]N$
 - Where H hours, T standard hours, W standard wage, Z fixed costs, and x overtime premium
- Three cases:
 - $T \gg H^*$: reduction has no effect
 - $T = H^*$: ambiguous employment effect
 - $T < H^*$: reduction increases marginal cost of each job but not marginal cost of overtime (negative employment effect)

Mandatory work reduction and employment – Increased hourly wage

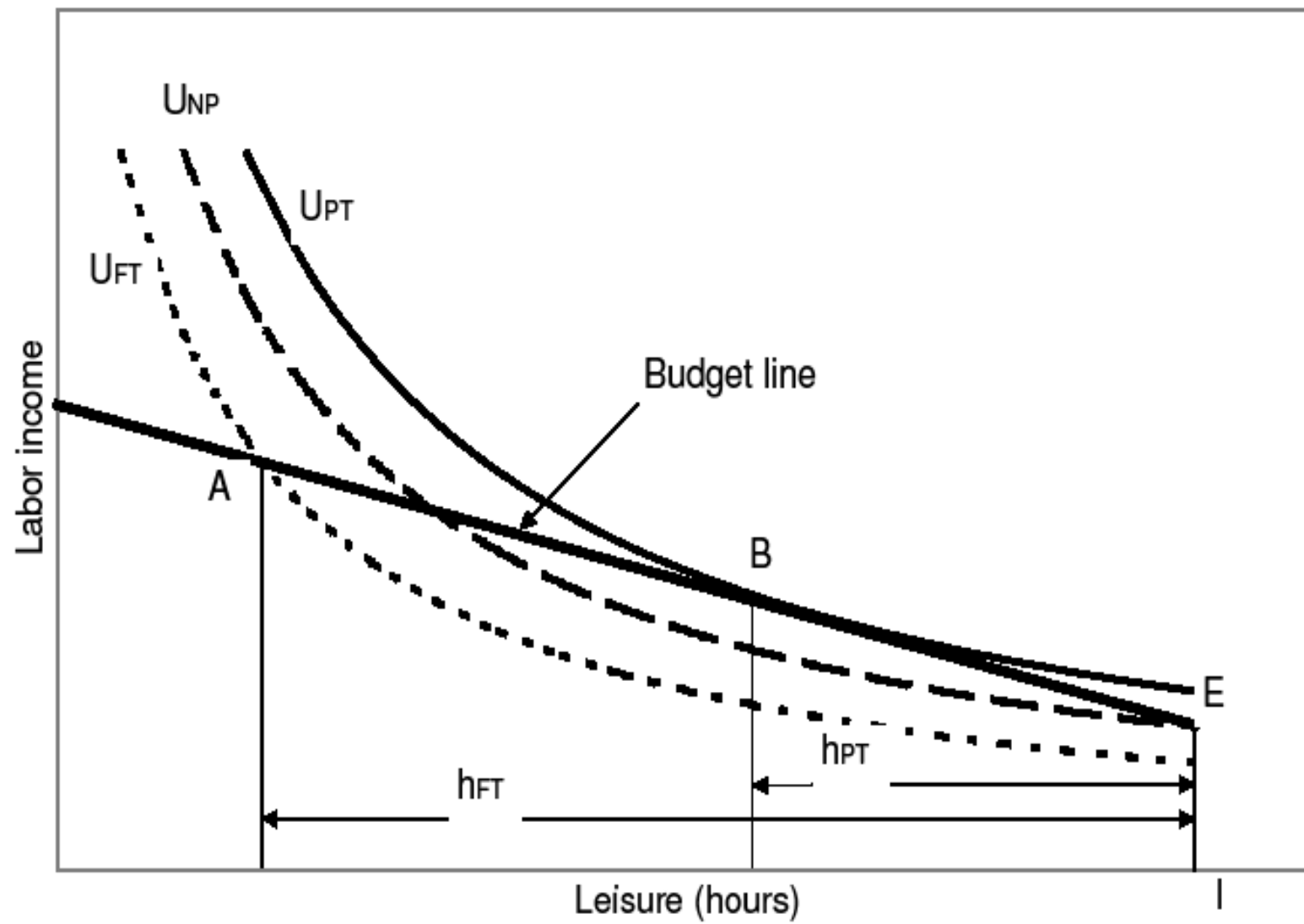
- But: if working time is reduced, workers often bargain an hourly wage increase to keep the weekly/monthly wage constant
- As a result: lower employment
- With two caveats (counteracting forces):
 - Increased productivity (fatigue reduction)
 - Reorganization of production process
- Empirical evidence or simulations: employment losses if wage increase (to respond to this, governments usually introduce payroll subsidies)

Theory (2) – regulating part-time work

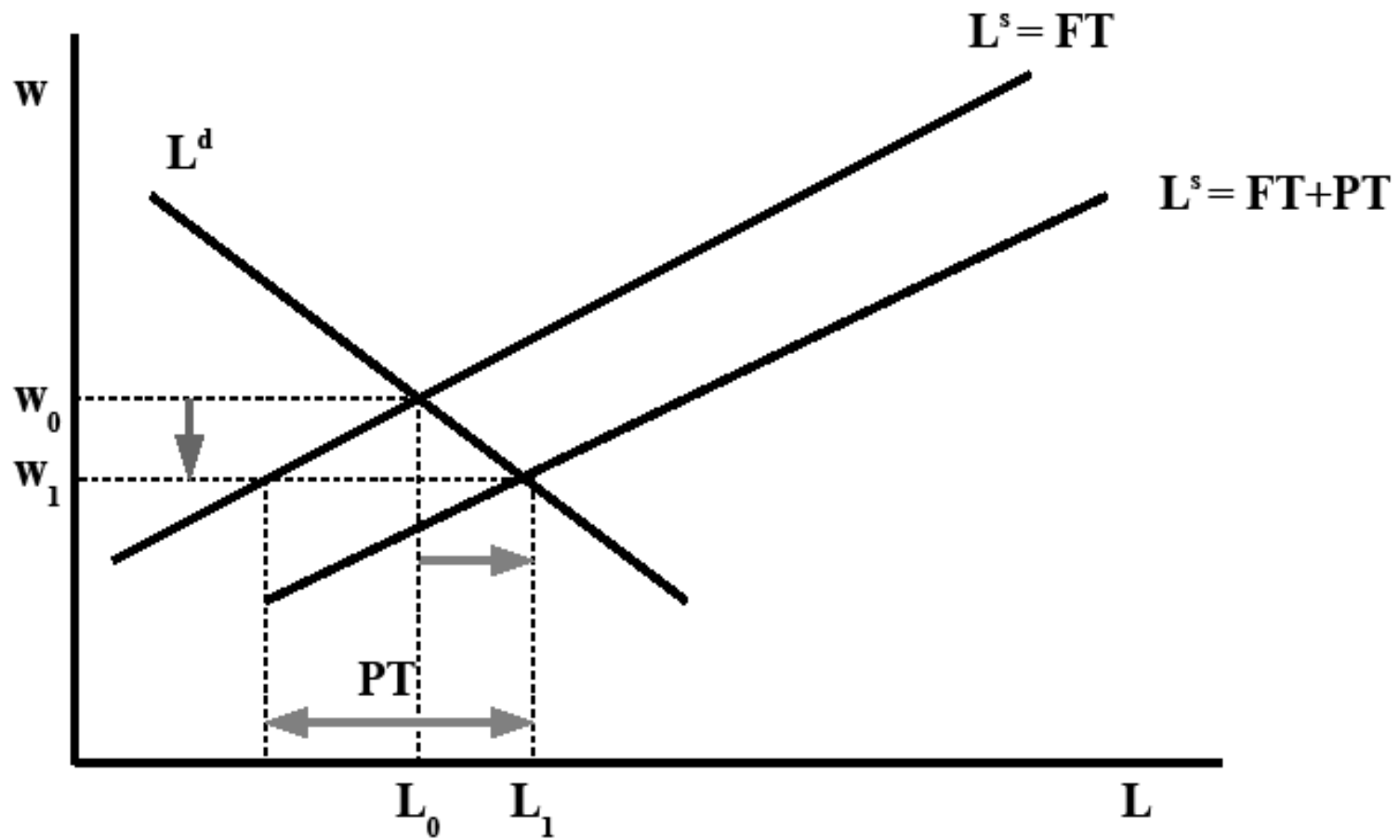
- If only full-time jobs are available introduction of part-time jobs increases labor supply
- Outward shift of labor supply curve lowers wages and reduces full-time employment
- Introduction part-time jobs may also shift labor demand curve



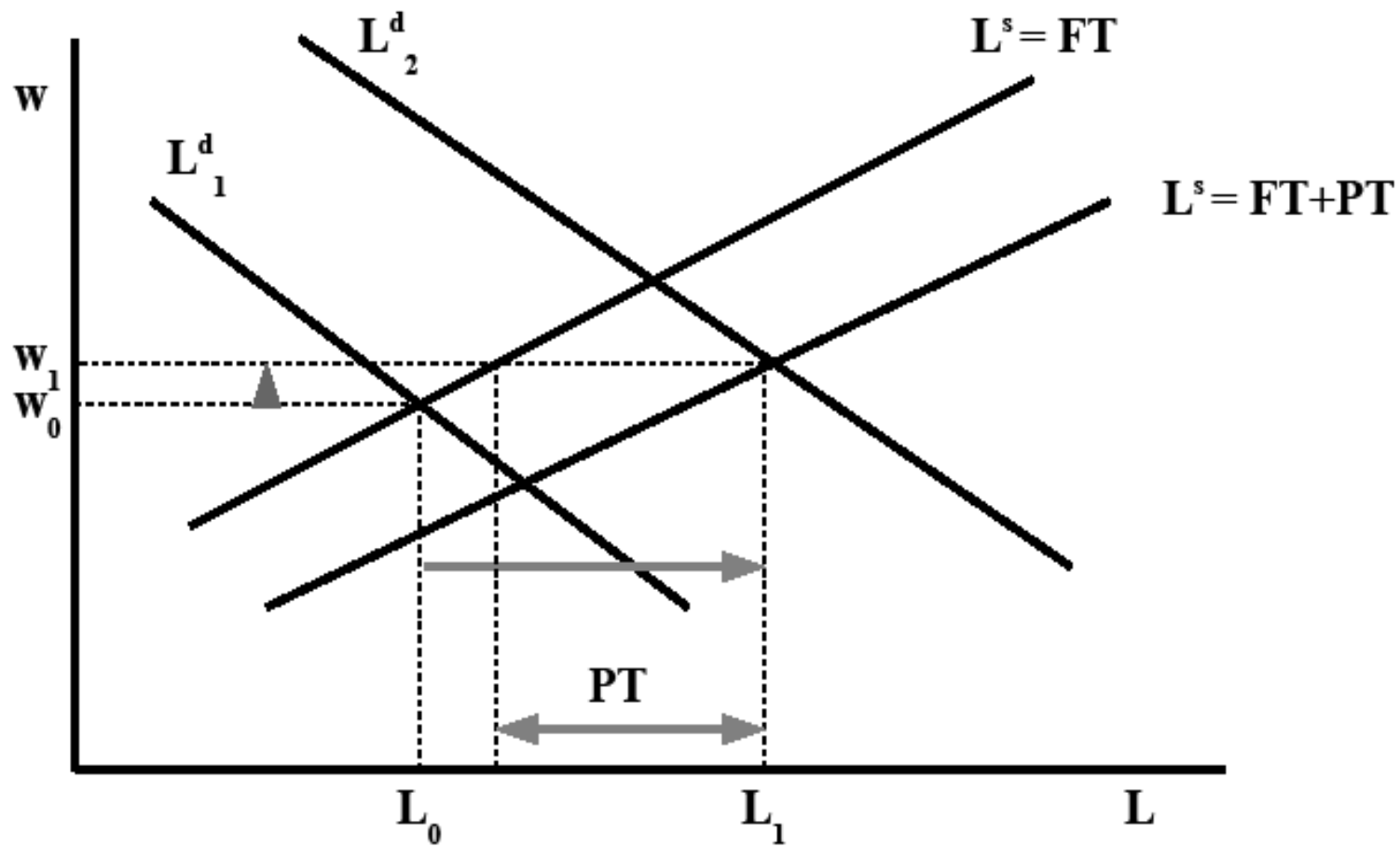
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Empirical evidence – hours of work

- Substantial decline in hours of work between 1995 and 2005
- Substantial cross-country differences in annual working hours in 2005: 2393 (Korea) – 1360 (Norway)
- Anatomy of typical workweek:
 - Weekly hours: 30.1 (Netherlands) – 43.2 (Iceland)
 - Workweeks per year: 35.4 (Sweden) – 44.6 (Greece)

Table 5.2: Average annual hours actually worked per person in employment (1955-2005) and the anatomy of a typical working year for dependent employees (2002)

	Average annual hours		Average Annual change	Anatomy annual hours 2002		
	1955	2005		Hours per week	Weeks per year	Hours per year
Australia	1984	1753	-4.6	-	-	-
Austria	2086	1519	-11.4	38.4	39	1497
Belgium	2346	1611	-14.7	36.3	40	1451
Canada	2062	1768	-5.9	-	-	-
Czech Republic	-	1940	-	41.3	41	1692
Denmark	2070	1552	-10.4	36.3	38.9	1410
Finland	2048	1714	-6.7	38.8	38.5	1491
France	2040	1434	-12.1	36.2	40.5	1467
Germany	2265	1437	-16.6	36.5	40.6	1480
Greece	2275	1912	-7.3	40.7	44.6	1816
Hungary	-	1804	-	40.9	43.9	1798
Iceland	2391	1794	-11.9	43.2	39.6	1714
Ireland	2378	1636	-14.8	36.3	43.7	1585
Italy	1958	1592	-7.3	37.4	41	1533
Japan	2081	1775	-6.1	-	-	-
Korea	-	2392	-	-	-	-
Luxembourg	2434	1544	-17.8	37.9	41.7	1582
Mexico	-	2110	-	-	-	-
Netherlands	2207	1409	-16.0	31.8	38.4	1223
New Zealand	1980	1749	-4.6	-	-	-
Norway	1987	1360	-12.6	37.3	36	1339
Poland	-	1994	-	41.8	43.4	1817
Portugal	2270	1709	-11.2	40.4	41.8	1688
Slovak Republic	-	1739	-	41.8	42.2	1761
Spain	2041	1774	-5.3	38.8	42.2	1639
Sweden	1987	1587	-8.0	38.1	35.4	1349
Switzerland	2013	1534	-9.6	37.5	42.3	1586
Turkey	2278	1918	-7.2	-	-	-
United Kingdom	2156	1624	-10.6	38.2	40.5	1546
United States	2030	1790	-4.8	-	-	-

Note that the estimates for average annual working hours are intended to include paid overtime and exclude paid hours that are not worked due to sickness, vacation and holidays, et cetera; annual weeks

Mandatory reduction of working hours in France

Crépon and Kramarz (2002)

May 1981: Mitterand/socialist victory

January 16, 1982: ordinance decreasing standard hours from 40 to 39 (effective February 1)

Treatment group: people working 40 or overtime before treatment took place

Control group: people working less (36-39)

Two sources of identification:

- Transactions 1981-82 w.r.t. 1978-81 (2%-4% estimates)
- Effect on those still employed 40 hours in 1982 (4% estimate)

Mandatory reduction of working hours in France

Crépon and Kramarz (2002) – contd.

A simple example. Cumulative employment losses.

	1979-81	1980-82	Diff.
40 hours	5.5	6.2	0.7
39 hours	7.3	3.2	-4.1
Diff.	-1.8	3.0	4.8

Empirical evidence – part-time work

- Among men most common in Australia (16%)
- Among women: Czech-Slovak Republics, Hungary: <10%, Netherlands >60%
- In theory part-time work is negotiated; in practice not always voluntary
- Negative relationship between incidence of part-time work and share of women who work part-time involuntarily:
 - Finland: 8% - 40%
 - Netherlands: 61% - 5%

Table 5.3: Part-time employment (%)

	Part-time employment		Involuntary Part-time		Part-timers prefer FT		Full-timers prefer PT	
	Men	Women	Men	Women	Men	Women	Men	Women
Australia	15.7	41.7	17.0	8.5	–	–	–	–
Austria	4.8	29.6	–	–	–	–	–	–
Belgium	6.2	33.1	–	–	31	25	9	36
Canada	10.8	26.9	34.9	29.8	–	–	–	–
Czech Republic	1.6	5.5	1.8	3.7	–	–	–	–
Denmark	12.0	24.9	13.1	13.9	69	8	7	21
Finland	7.9	14.8	32.8	40.2	–	–	–	–
France	5.3	23.3	52.9	38.8	69	35	11	25
Germany	7.4	39.4	17.8	12.6	52	12	5	10
Greece	3.0	11.1	50.2	36.0	33	25	8	9
Hungary	1.8	5.0	–	–	–	–	–	–
Ireland	6.8	34.8	–	–	78	30	8	12
Italy	5.3	29.2	–	–	83	42	22	32
Japan	14.2	42.3	18.9	4.0	–	–	–	–
Korea	6.5	12.5	–	–	–	–	–	–
Luxembourg	1.7	31.1	–	–	–	–	–	–
Netherlands	15.3	60.9	8.2	4.6	25	7	13	23
New Zealand	10.2	35.3	–	–	–	–	–	–
Norway	10.0	32.9	17.2	15.2	–	–	–	–
Poland	7.1	17.4	–	–	–	–	–	–
Portugal	5.9	14.4	16.1	24.1	100	40	7	2
Slovak Republic	1.4	4.1	–	–	–	–	–	–
Spain	4.2	22.2	–	–	36	37	8	14
Sweden	–	–	34.7	31.3	–	–	–	–
Switzerland	8.0	45.8	8.4	5.8	–	–	–	–
Turkey	3.2	13.4	–	–	–	–	–	–
United Kingdom	10.0	39.3	23.8	9.5	72	22	3	9
United States	7.8	18.3	7.4	8.0	–	–	–	–

Notes: Part-time employment refers to persons who usually work less than 30 hours per week in their main job. It is measured as a percentage of total employment (2005); involuntary part-time employment is the percentage of the interviewees who state that they are working part-time because they could not find a full-time job (1997); Part-timers who prefer to work full-time and full-timers who prefer to work

Policy issues

- Should governments regulate hours of work?
Difficult to find strong arguments in favor of intervention
- Employment is not a lump-of-labor that can be redistributed at no costs
- Should governments stimulate part-time work?
Growth of part-time jobs may stimulate full-time employment (Netherlands)
- Part-time jobs may facilitate combination of work and care