Family and work; Family Policies

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Study Materials and Reading List

- Slides of the lectures

- All materials provided on: http://home.cerge-ei.cz/pytlikova/LaborSpring16/

Compulsory Readings:

- Borjas 6e, Chapter 8 labor supply;
  Ludsteck, Johannes; Schönberg, Uta (2014): Expansions in maternity leave coverage and mothers' labor market outcomes after childbirth. In: *Journal of Labor Economics*, Vol. 32, No. 3, S. 469-505.

- **Other Relevant Literature:**

- Ehrenberg and Smith, Modern Labor Economics, chapter 6.

- Boeri and van Ours: Imperfect Labor Markets, Chapters 5, 6 and 7.

- Dustmann, C. and U. Schoenberg (2011): "Expansions in maternity leave and Children's Long-Term Outcomes" *American Economic Journal: Applied Economics* 4(3), pp. 190-224.

- Goldin C. (2014): A Grand Gender Convergence: Its Last Chapter. *American Economic Review*. 104(4):1091-1119.

OUTLINE

Labor supply

Analyses on worker behaviour

Labour supply decisions:

- *Extensive margin*: Decision whether to work or not

- *Intensive margin*: Decision about how long to work; Part time vs. full time and number of working hours;

Labor supply - Trends in Labour Force Participation

During the past century, changes in the labour force participation rates (LFP) for males and females:

- A sharp increase in female participation in the labour force; most pronounced for married females.
- labour force participation of males has declined (relatively young males and males aged 65 and older)
- Causes:

Labor Force Participation Rates of Females in the United States over 16 Years of Age, by Marital Status, 1900–2008 (Percentage)

Year	All Females	Single	Widowed, Divorced	Married
1900	20.6	45.9	32.5	5.6
1910	25.5	54.0	34.1	10.7
1920	24.0			9.0
1930	25.3	55.2	34.4	11.7
1940	26.7	53.1	33.7	13.8
1950	29.7	53.6	35.5	21.6
1960	37.7	58.6	41.6	31.9
1970	43.3	56.8	40.3	40.5
1980	51.5	64.4	43.6	49.8
1990	57.5	66.7	47.2	58.4
2000	59.9	68.9	49.0	61.1
2008	59.5	65.3	49.2	61.4

Ehrenberg and Smith: Table 6.1 Labor Force Participation Rates of Females in the United States over 16 Years of Age, by Marital Status, 1900–2008 (Percentage)

Labor Force Participation Rates for Males in the United States, by Age, 1900–2008 (percentage)

Age Groups						
Year	14–19	16–19	20–24	25–44	45–64	Over 65
1900	61.1		91.7	96.3	93.3	68.3
1910	56.2		91.1	96.6	93.6	58.1
1920	52.6		90.9	97.1	93.8	60.1
1930	41.1		89.9	97.5	94.1	58.3
1940	34.4		88.0	95.0	88.7	41.5
1950	39.9	63.2	82.8	92.8	87.9	41.6
1960	38.1	56.1	86.1	95.2	89.0	30.6
1970	35.8	56.1	80.9	94.4	87.3	25.0
1980		60.5	85.9	95.4	82.2	19.0
1990		55.7	84.4	94.8	80.5	16.3
2000		52.8	82.6	93.0	80.4	17.7
2008		40.1	78.7	91.9	81.4	21.5

Ehrenberg and Smith: Table 6.2 Labor Force Participation Rates for Males in the United States, by Age, 1900–2008 (percentage)

Labor Force Participation Rates of Women and Older Men, Selected Countries, 1965–2008 (Percentage)

Country	1965	1973	1983	1993	2008
Women, Age 25 to 54					
Canada	33.9	44.0	65.1	75.6	82.0
France	42.8	54.1	67.0	76.1	83.2
Germany	46.1	50.5	58.3	72.5	80.5
Japan	–	53.0[a]	59.5	65.2	70.3
Sweden	56.0	68.9	87.1	88.2	87.5
United States	45.1	52.0	67.1	74.6	75.8
Men, Age 55 to 64					
Canada	86.4	81.3	72.3	60.4	67.2
France	76.0	72.1	53.6	43.5	42.6
Germany	84.6	73.4	63.1	53.0	67.2
Japan	–	86.3[a]	84.7	85.4	85.1
Sweden	88.3	82.7	77.0	70.9	76.7
United States	82.9	76.9	69.4	66.5	70.4

Ehrenberg and Smith: Table 6.3 Labor Force Participation Rates of Women and Older Men, Selected Countries, 1965–2008 (Percentage)

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DIFFERENCES ON LABOUR MARKETS – gender
Gender labour force participation gap, OECD countries, 2000 and 2012

	2000		2012			2000		2012	
Country	Female	Male	Female	Male		Female	Male	Female	Male
Australia	65	83	70	83	Japan	60	85	63	84
Austria	62	80	70	81	Korea	52	77	55	78
Belgium	57	74	61	73	Netherlands	65	83	74	84
Canada	70	82	74	82	New Zealand	67	83	73	83
Czech Rep.	64	79	64	80	Norway	76	85	76	81
Denmark	76	84	76	81	Poland	60	72	60	73
Finland	72	78	73	77	Portugal	64	79	70	78
France	62	75	67	75	Slovakia	63	77	62	77
Germany	63	79	72	82	Spain	53	80	69	81
Greece	50	77	58	77	Sweden	76	81	78	83
Hungary	53	67	58	71	Switzerland	72	89	77	89
Ireland	56	80	62	77	United Kingdom	69	84	71	83
Israel	56	67	67	76	United States	71	84	68	79
Italy	46	74	54	75	OECD Total	59	81	62	80

Table 8.4: Legislative limits on normal weekly hours of work and overtime work

Boeri&Van Ours – Table 5.1 pg 103

	Legal maxima on working hours			Bargained normal hours	Wage premium on overtime hours (%)
	Normal hours	Overtime hours	Maximum 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

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Table 8.5: Part-time employment (%)

Boeri&Van Ours – Table 5.3 pg 114

	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	–	–	–	–

Simple model of labor supply

- Basic neoclassical model; individuals are assumed to face a trade-off between labor and leisure time

- Two possible uses of time: labor and leisure

- Each individual is assumed to select a mix of time and purchased inputs that maximizes his or her level of satisfaction (utility)

- The model can help to understand the work-incentive effects of higher wages and incomes, different kinds of taxes and welfare programs.

- The decision to work depends on 3 factors: opportunity costs (wage), wealth, preferences

Opportunity costs and optimal allocation of time

- Leisure contributes to well being;
- Working contributes to producing goods and services;
- The opportunity cost of an additional hour of leisure time is the wage payment (w) that is given up by choosing to not work;
- Individuals choose to not work an additional hour if the value of leisure time exceeds the market wage rate;
- Individuals will work an additional hour if the value of the products that can be purchased with the wage outweigh the benefits of an additional hour of leisure time;

Effects of a wage change

- Two effects on an individual's labor supply:
  - **substitution effect**
  - **income effect.**
- As the wage rate rises, the opportunity cost of leisure time rises
- In response to this higher wage, individuals consume less leisure time and spend more time at work. This is the **substitution effect** resulting from a higher wage.
- An increase in the wage, however, also raises an individual's real income, which leads to an increase in the consumption of all normal goods (incl. leisure) = **income effect**.

Effects of a wage change

The two effects, SE and IE, act simultaneously and in opposite direction.

Which effect is stronger cannot be said apriori.

Assuming that leisure is a normal good, an increase in the wage will cause the quantity of labor supplied to:

- increase if the SE>IE (low levels of wages)
- decrease if the IE>SE (high levels of wages)
- Thus, the individuals' labour supply curve is **backward-bending**

In practice, it appears that most labor supply curves are either upward sloping or vertical

FIGURE 8.1 Backward-bending labor supply curve
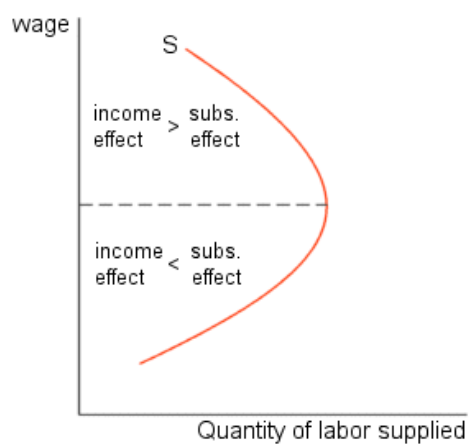
Analysis of the Labor/Leisure Choice

- Use indifference curves and budget constraints to illustrate the optimal combination of labor and leisure
- Preferences: two major categories of goods that make people happy – leisure time (L) and the goods people can buy with money (derived from revenues Y)
- Leisure and money are substitutes for each other
- Utility function U = U(Y,L)

   where U = the level of utility associated with alternative combinations of L and Y (represented by indifference curves)

- Indifference curve provides a graph of all of the combinations of income and leisure that provides a given level of utility to an individual

FIG: Two Indifference Curves for the Same Person
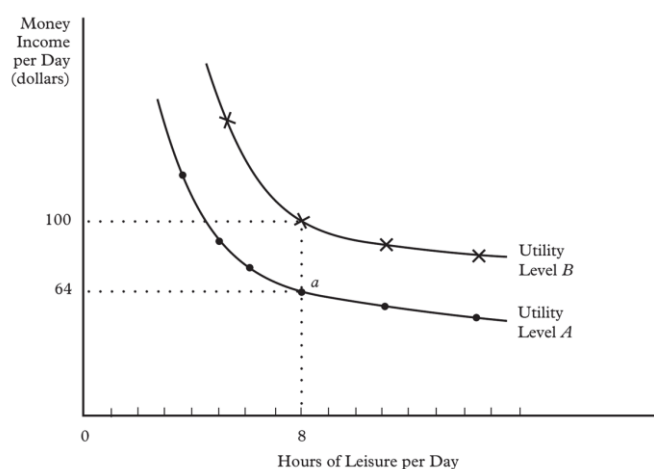
E&S – Fig.6.2 pg 177

Properties of indifference curves

- Indifferences curves on the left have more utility
- Indifference curves never intersect
- Indifferences curves are negatively sloped
- Indifference curves are convex
  - When income is high and leisure low, increased leisure is highly valuable and vice versa
- Different people have different indifference curves

Fig.: An Indifference Curve
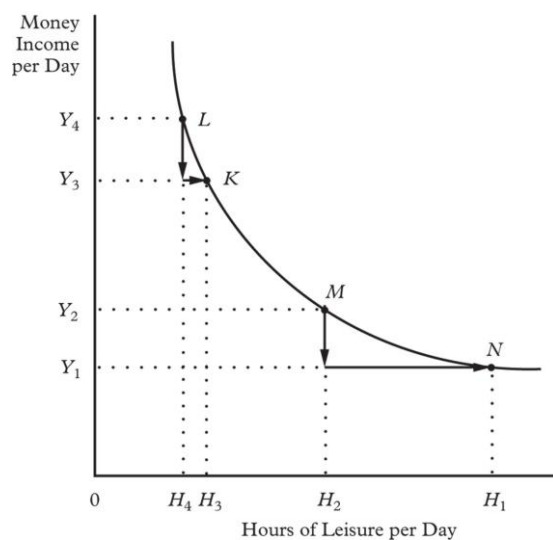
E&S – Fig.6.3 pg 177

Slope of the Indifference Curve

- The absolute value of the slope of an indifference curve is a measure of the opportunity cost of time at that point
- Measure the amount of income that is required to induce the worker to give up an hour of leisure time (MRS between leisure and money income)
- A steep indifference curve indicates that a large change in income is required to induce an additional hour of work; a relatively small increase of income can induce an additional hour of work when indifference curves are relatively flat.
- Indifference curves are relatively steep when the value of time in non market activities is relatively high

FIG: Indifference Curves for Two Different People

Money Income per Day

(a) Person Who Places High Value on an Extra Hour of Leisure

Money Income per Day

(b) Person Who Places Low Value on an Extra Hour of Leisure

0

Hours of Leisure per Day

0

Hours of Leisure per Day
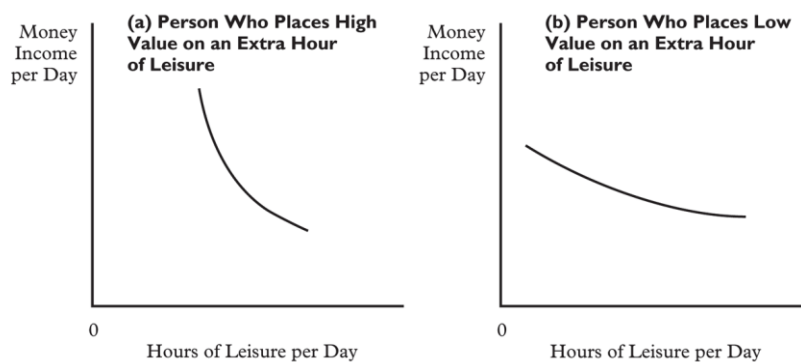
E&S – Fig.6.4 pg 179

Time and wage/income Constraints

- Individuals attempt to achieve the highest possible level of utility

- The choice among alternative levels of Y and L, however, is restricted due to two constraints:

- A <u>time constraint</u>: H + L = T   (1)

    where H = hours of work, L hours of leisure and T total time

- Thus, the time spent at work plus time spent at leisure must add up to the total time available

Time and Wage/Income Constraints

- A <u>consumption constraint</u> pY = wH   (2)

    where w = wage rate, H=hours of work, p = price index for real income and Y = real income

- Thus, total spending (pY) must equal earnings (= wH)

- Since this is a one-period model, saving and lending do not occur

- With a little algebra, wT = pY + wL

- An individual's maximum earnings potential (= wT in this case) equals the total explicit costs of goods and services (pY) plus the total implicit cost of leisure time (wL)

Budget Constraint

- Alternatively, Y = (w/p)T -(w/p)L
- This is an individual's budget constraint – reflects combinations of leisure and income that are possible for an individual.
- The intercept of the budget constraint on the horizontal axis equals T. This is the maximum amount of leisure time that an individual can receive
- The intercept of the budget constraint on the vertical axis equals wT/p (= the real value of full income)
- The slope of the budget constraint equals -w/p
- The individual select combination of income and leisure that provides the highest possible level of utility
- The optimal combination of L and Y occurs at a point of tangency between the budget constraint and an indifference curve

FIGURE 8.3: Budget Constraint faced by a worker
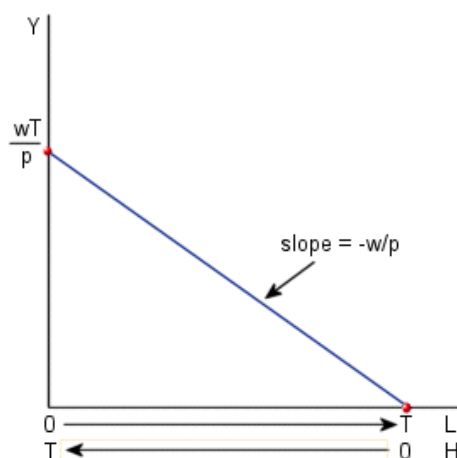
FIG: Indifference Curves and Budget Constraint
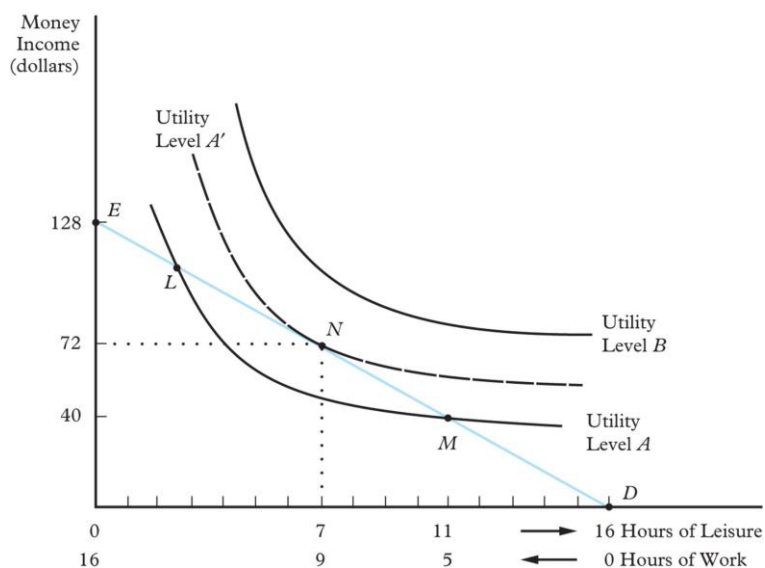
Corner Solution

- A corner solution occurs when the indifference curve is steeper than the budget constraint at the point corresponding to **zero hours of work**
- The highest possible level of utility occurs at zero hours of work.
- An individual chooses to remain out of the labor force when a corner solution such as this occurs.
- The absolute value of the slope of the indifference curve is a measure of the opportunity cost of leisure time while the absolute value of the slope of the budget constraint is the real wage
- A corner solution occurs when the value of leisure time is relatively high and/or the market wage is relatively low

FIG: Corner Solution (or the decision not to work
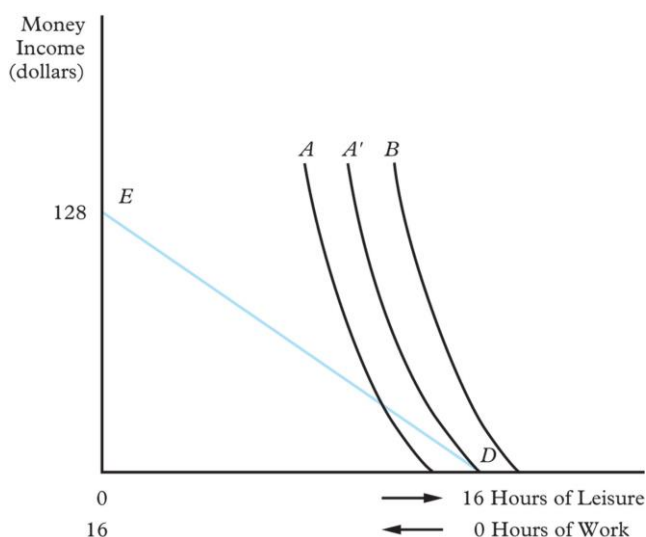
Increase of Non Labor Income

- Assumed that all income is received in the form of labor income

- What happens if an individual receives also nonlabor income A?

- New budget constraint is Y = -(w/p)L + (wT+A)/p

- As the level of nonlabor income rises
  - the budget constraint shifts vertically in an upward direction
  - the slope of the budget constraint stays the same when nonlabor income changes

- If leisure is a normal good, an increase in nonlabor income results in an increase in leisure time and a reduction in hours worked

- Called "pure income effect"

FIG: Effect of Nonlabor Income Increase - "Income Effect"

E&S – Fig.6.7 pg 183
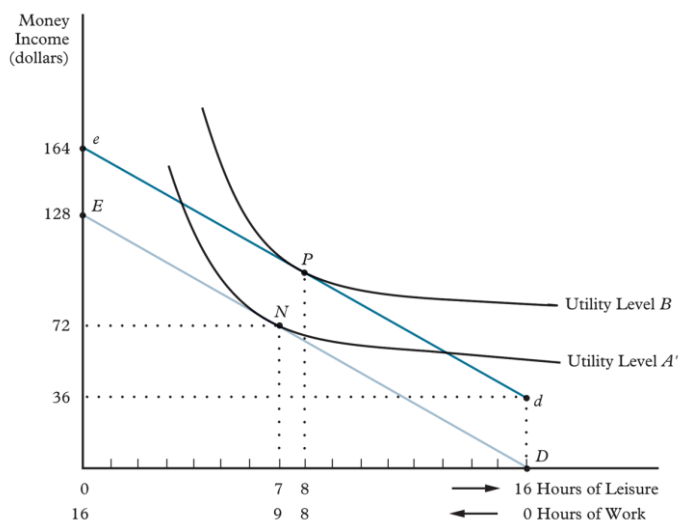
Increase of Wage Rate

- Both an income effect and a substitution effect
- Workers would be healthier and face a higher opportunity cost of leisure
- Substitution effect pushes toward more hours of work
- Income effect pushes toward fewer hours of work

- Total effect depends on which effect dominates - i.e. the shape of the indifference curve -the budget constraint (reflecting wealth and the wage rate) is exactly the same whether IE or SE is dominating

Substitution Effect

- Relative price of leisure to work changes when wage changes
- If wage increases, leisure is more expensive
- Workers want more to "buy" more of the good that has become cheaper and less of the good that is more expensive
- Substitution effect is the change in hours of leisure associated with a change of wage, <u>holding the level of utility constant</u>
- Stay on the same indifference curve
- When wage increases, always leads to a decrease of leisure hours

Income Effect

- Consumers experience an increase in real purchasing power when their wage increase/ workers more wealthy
- The IE is the change in hours of leisure associated with a change of wealth, <u>holding the wage rate constant</u>
- Analyzed *as if* an increase in non-labor income was responsible for the move to a higher indifference curve
- Thus, stay on the same budget constraint (parallel shift)
- Since leisure is a normal good for this individual, the quantity of leisure consumed rises (and hours worked declines) as real income rises in response to the higher wage

Graphical Illustration – Income and Substitution Effect

- Wage increases from $8 to $12 per hour
- The quantity of labor supplied increases in response to this higher wage
- In the example, this suggests that the income effect must be smaller than the substitution effect for this individual

FIG Wage Increase with Substitution Effect Dominating: Isolating Income and Substitution Effects
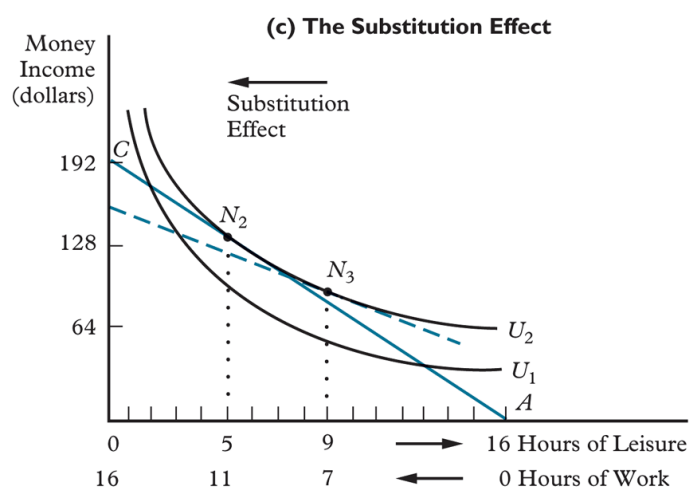

(a) The Observed Change

E&S – Fig.6.10 pg 186

FIG: Wage Increase with Substitution Effect Dominating: Isolating Income and Substitution Effects

(b) The Income Effect

E&S – Fig.6.10 pg 186

FIG: Wage Increase with Substitution Effect Dominating: Isolating Income and Substitution Effects

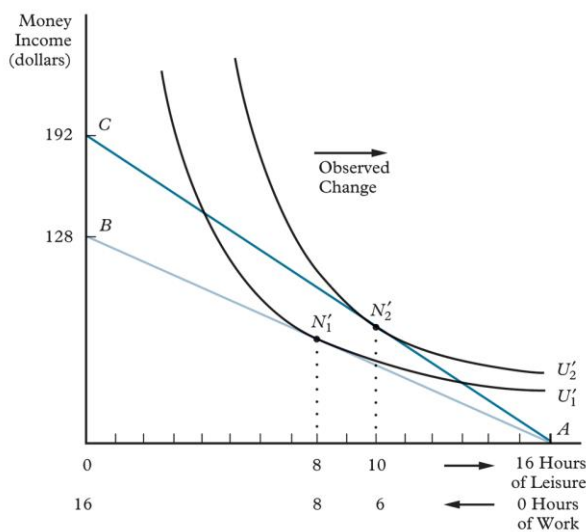**(c) The Substitution Effect**

E&S – Fig.6.10 pg 186

19
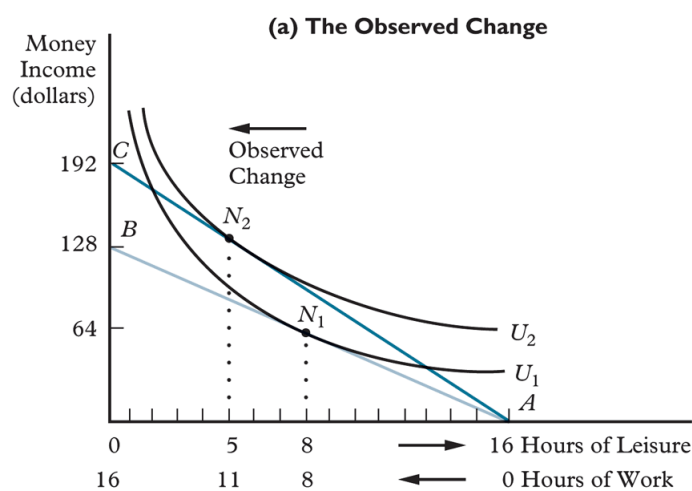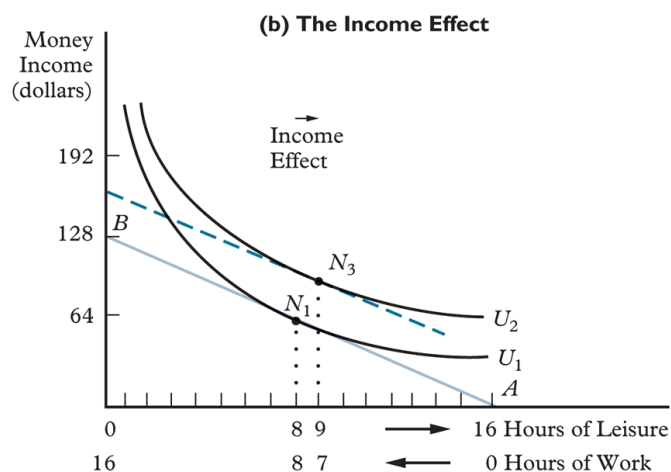
FIG: Wage Increase with Income Effect Dominating

E&S – Fig.6.9 pg 185

Which Effect Dominates?

- Will depend on preferences of workers
- Will depend on the initial hours of work
- Will depend on reservation wage of the worker
- Will depend if the worker is already in the labor force or not

Reservation Wage

- The absolute value of the slope of the indifference curve at the point corresponding to zero hours of work is the individual's reservation wage
- If the real wage in the labor market exceeds the reservation wage, the individual chooses to work
- If the real wage in the labor market is less than the reservation wage, the individual chooses to remain out of the labor force and a corner solution occurs.

Empirical Findings

- Theory suggest that choices workers make concerning desired hours of work depend on their wealth and the wage rate
- Estimates of wage elasticities of the supply
- Intensive and extensive margins (working hours and decision to participate)
- Use of cross-sectional data on individuals and households
- Basic equation used:

$$\ln h_t = \alpha_w \ln w_t + \alpha_R R_t + x_t \theta + \varepsilon_t$$

- Where ht are hours worked, Rt is a measure of income other than the current wage (also non-earned income from other household members), xt is a vector of individual characteristics/controls, wt hourly wage. α_w is the wage elasticity of labor supply.
- Estimation by OLS, individual FE. A need of exogenous source of changes in wages e.g. changes in taxes with a proper control groups – possibility of applying DiD..
- Negative income effect, positive substitution effect on # hours of work

Empirical Findings

- Findings:
- Reservation wage matters
- Labor supply elasticities for men found to be very small (often insignificant)
- Greater effects for women with substitution effect dominating via more labor participation (not hours)
- Over 1980-200 married women's supply elasticity was halved (the labor supply slope became steeper) and the labor supply became less responsive to their husband's wages (Heim, 2007) => labor supply's behavior closer to men's behavior (probably because they became more economically independent of men, and more orientated towards their careers).

- Policy applications: Apply tools of labor supply to analyzing the incentives effects of:
  - Welfare programs;
  - tax and welfare reforms,
  - Child care introduction/extension etc.

Extensions to the simple labor supply model

- -A person's weekly (168) hours can be spent on:
  - Paid work
  - Household work (*cooking, cleaning, child care)*
  - Leisure
  - Personal care
- ➤ Time spent in these four areas differs based on gender and marital status.

- ➤ Women with young children spend more time in household work activities and less time in paid work than women with older children.

- ➤ Generally, women spend more time in household work and less time in paid work than men
- ➤ > extend basic labor supply model to include paid market work, leisure, *and household work*

Weekly Hours Spent in Household Work, Paid Work, and Leisure Activities by Men and Women over Age 18, 2012

	Households with Children < 6		Households with Children 6–17		Households with No Children < 18	
	Women	Men	Women	Men	Women	Men
Paid Work[a]	21	37	24	38	21	28
Household Work[b]	40	23	31	18	23	16
Leisure[c]	30	35	36	39	45	49
Personal Care[d]	75	71	76	72	77	74

[a]Includes commuting time.
[b]Includes time spent purchasing goods/services and caring for others.
[c]Includes time spent in volunteer and educational activities.
[d]Includes time spent sleeping and eating.
Source: U.S. Department of Labor, Bureau of Labor Statistics, "American Time Use Survey—2012 Results," Table 8 at http://www.bls.gov/news.release/atus.t08.htm.

E&S Table 7.1

Time use in households

	Men		Women	
	1965	1981	1965	1981
Paid work (including commuting)	51.6	44.0	18.9	23.9
Household work	11.5	13.8	41.8	30.5
Leisure	36.7	41.8	35.4	41.9
Personal care	68.2	68.2	71.9	71.6

Source: F. Thomas Juster and Frank P. Stafford, "The Allocation of Time: Empirical Findings, Behavioral Models, and Problems of Measurement," *Journal of Economic Literature* 29 (June 1991): Table 3.

SE has been dominating for women (but has begun to fade recently)
IE dominating for men

A Labor Supply Model That Incorporates Household Production

The Basic Model for an Individual: Similarities with the Labor-Leisure Model

➢ "Household production time" replaces "leisure time."

➢ Household production activities may include:
   • Doing chores
   • Relaxing at home – going to the movies or shopping

A Labor Supply Model That Incorporates Household Production

Preferences

• It is assumed that Sally's household spends time on:
   (a) providing a clean house,
   (b) good nutritional meals,
   (c) raising happy children, and
   (d) relaxation activities which can enhance their utility.

• Household activities listed as (a) – (d) can also be acquired through paid market work.

• Therefore:
   Let Y = Income derive from labor market work.
   H = Time spent on household production activities.

   $U = f(Y, H) \rightarrow$ Sally's household utility function (represented by the indifference curve)

A Labor Supply Model That Incorporates Household Production

- Along a given household's indifference curve:

$$\Delta Y.MU_Y + \Delta H.MU_H = 0 \rightarrow \text{utility is constant}$$

$$\frac{\Delta Y}{\Delta H} = -\frac{MU_H}{MU_Y} = MRS_{Y,H} \rightarrow \text{slope of the indifference curve}$$

Budget Constraint

- Similar to the budget constraint derived in Chapter 6, Sally's household budget constraint can be expressed as:

$$Y = w(M) + V$$

  where w = market wage, M = market time spent on paid work, and V = nonlabor income.

- Let T (Discretionary time) $= H + M, \therefore M = T - H$

A Labor Supply Model That Incorporates Household Production

- $Y = w(T - H) + V$, that is: $Y = (wT + V) - wH$

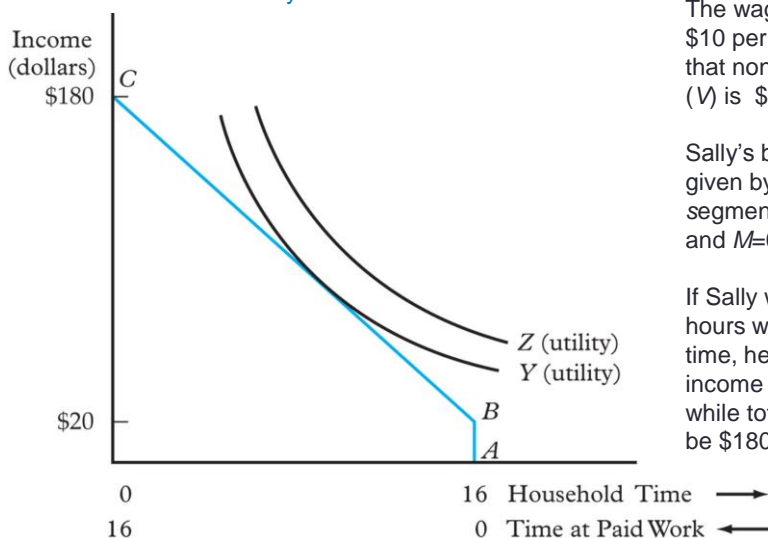$$\frac{\Delta Y}{\Delta H} = -w \rightarrow \text{slope of the budget line}$$

- Remember that the slope of the indifference curve is:

$$MRS_{Y,H} = \frac{\Delta Y}{\Delta H} = -\frac{MU_H}{MU_Y}$$

- Sally's household utility will be maximized at the point of tangency between the indifference curve and the budget constraint. That is, when:

$$MRS_{Y,H} = w$$

E&S Figure 7.1 Household Time and Income Are Substitutes in the Production of
Commodities Sally Consumes

The wage rate (*w*) is
$10 per hour per and
that nonlabor income
(*V*) is $20.

Sally's budget line is
given by line *ABC.* At
*s*egment *AB*: *H*=16
and *M*=0.

If Sally works 16
hours with no leisure
time, her labor
income will be $160
while total income will
be $180 ($160+ $20).

A Labor Supply Model That Incorporates
Household Production

Income and Substitution Effects

- Applying the same concepts and interpretations as in Chapter 6, we can also
  conclude that:

  - If *W*↑ and Sally increases his or her hours devoted to labor market work
    (*M*↑) and decreases hours devoted to home production (*H*↓), then the
    substitution effect is stronger than the income effect.

  - If *W*↑ and Sally reduces his or her hours of labor market work (*M*↓) and
    increases hours devoted to home production (*H*↑), then the income effect is
    stronger than the substitution effect

  - In Sally's case, the difference between his/her income effect and substitution
    effect due to changes in *W* and *V* will depend on the shape (steepness or
    flatness) of Sally's indifference curves – that is, preferences for *M* and *H*.

A Labor Supply Model That Incorporates Household Production

The Basic Model for an Individual: Some New Implications

- ➢ The decisions about labor supply (labor market work) and the decisions about how to produce the commodities (household production) we consume are jointly made.

- ➢ Household production activities – economic analysis of the family – goes beyond the simple labor supply issues to deal with issues such as: marriage, divorce, fertility, child-rearing practices, and other activities and decisions that families undertake.

A Labor Supply Model That Incorporates Household Production

- ➢ The steepness or flatness of the indifference curve will reflect the household's preference for labor market work in comparison to home production activities of the household.

    - • Steep indifference curve will mean preference for household production over labor market work ($H\uparrow$ and $M\downarrow$).

    - • Flat indifference curve will mean preference for less household production and more labor market ($H\downarrow$ and $M\uparrow$).

E&S Table 7.2

Labor Force Participation Rates and Full-Time Employment, Mothers of Young Children, by Age of Child, 2012

Age of Youngest Child	Labor Force Participation Rate		Percent Working Full-Time*	
	Married (%)	Single (%)	Married (%)	Single (%)
Under 1 year	57	57	75	61
1 year	62	66	70	67
2 years	62	71	72	69

*Percent of *employed* mothers working full time.
Source: U.S. Department of Labor, Bureau of Labor Statistics, "Employment Characteristics of Families—2012," USDL 13-0730 (Friday, April 26, 2013), Table 6.

> ➢ As children grow older, labor force participation rate of married women increased

Joint Labor Supply Decisions within the Household

➢ The allocation of time between labor market and household work involves *joint decision-making* by partners who live together.

➢ The decision-making about market and household work are also heavily influenced by custom.

➢ Marriage partners are assumed to have exactly the same preferences or that one partner makes all the decisions – "unitary" models – not supported by empirical evidence.

➢ The "collective" model assumes that partners have their own utility function and *bargain* over the allocation of each other's time – evidence supports the bargaining model and that the partners with greater access to resources carry more influence in family decision making.

**Joint Labor Supply Decisions within
      the Household**

Specialization of Function

➢ *Joint decision-making* by partners covers different areas of
   responsibilities such as:
   - meal planning
   - shopping
   - home maintenance
   - child-rearing

Theory
- Deciding which partner will take primary responsibility for child-rearing by staying at home depends on how a couple answers the following (two) questions:

- Who is relatively more productive at home?

- Who is relatively more productive in market work?

**Joint Labor Supply Decisions within
      the Household**

Implications for the Future

- Modeling the choice of who handles most of household duty based on the changes in *W* and *V* does not mean that customs are unimportant in shaping household preferences – they are.

- The theory of household production emphasizes that the distribution of household work may well change as wages, incomes, and home productivities change.

- A study found that when spouses work outside the home, the weekly hours that each spends in household work are affected by their relative wage rates.

   - If $W{\uparrow}|_{Wives} \rightarrow H{\uparrow}|_{Husbands}$ while $H{\downarrow}|_{Wives}$ and vice-versa.

Joint Labor Supply Decisions within the Household

Do Both Partners Work for Pay?

➢ Partners can hire an outsider to do many household chores since empirical evidence shows that greater hours spent on (specializing in) household work actually reduces one's future wage offers.

➢ More hours devoted to market work can enhance the economic resources (incomes = *Y*) of both partners than will be required to compensate for the lost hours of household work/time.

➢ Steeper budget constraint (holding income constant) will tend to increase – through the substitution effect – the desirability of increased market work and income (*flatter indifference curves* will also have same effect).

➢ Another force that could flatten the indifference curves (increased desire for market income) of household partners is the emphasis on an individual's or family's *relative standing in society* – particularly, if such social status depends on publicly observed consumption.

Joint Labor Supply Decisions within the Household

The Joint Decision and Independent Productivity at Home

➢ One partner's productivity at home is affected by the other partner's labor supply to the market.

➢ If the wife decides to increase her hours worked in the labor market, her husband's marginal productivity at home may *rise* as he takes over chores she once performed.

➢ If two partners enjoy each other's company, the value a husband places on his time at home could be reduced if his wife is at home less often – flattening his indifference curves and thus lead to an increase in his hours of paid work.

Family Policies

- Decision to work determined by family policies:
  - parental leave facilities
  - Parental leave payments, maternity leave payments,
  - childcare arrangements;
- Social policies that reduce the costs o raise children may affect not only labour supply decision but also fertility;
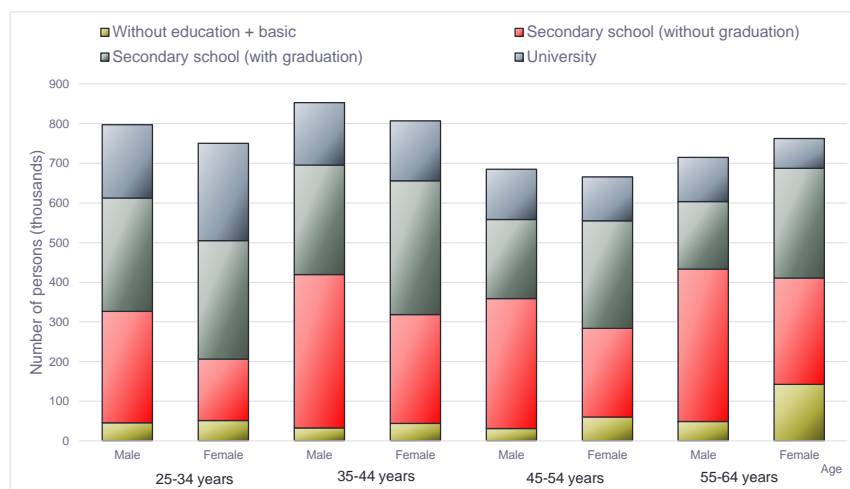
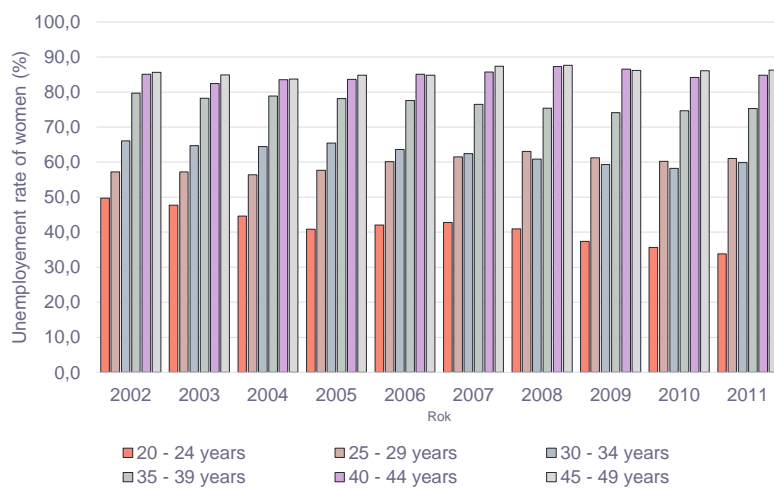## A case from Czech republic

- A few facts

Women – an increasingly the educated part of the workforce
Number of students enrolled at universities – by gender
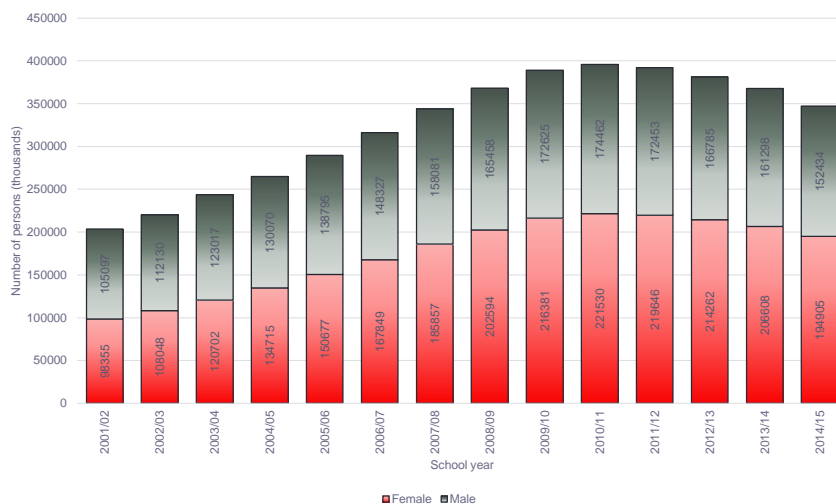
Women – an increasingly the educated part of the workforce
Number of students enrolled at universities – by gender

Unemployment rate of women in the Czech rep, by the age

Employment rates of women in the Czech rep, by the age of the youngest child in the family
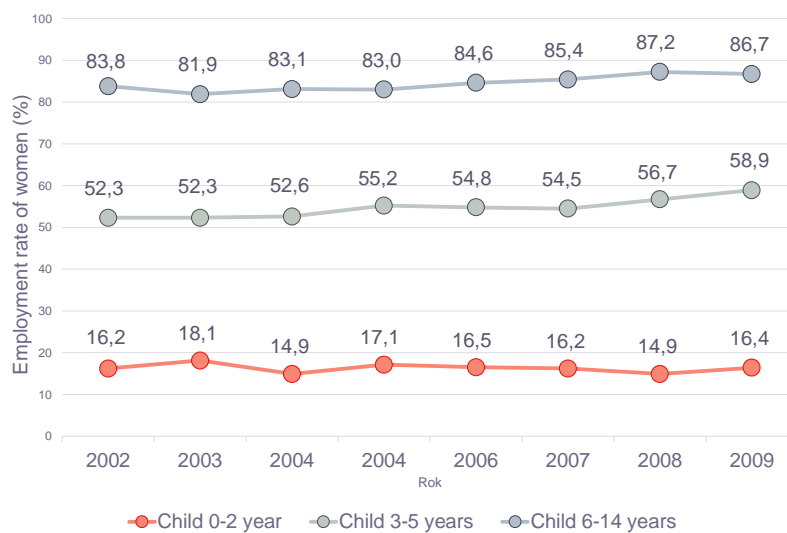
Table 8.8: Summary indicators of formal childcare coverage and maternity leave

|	Young children using formal child care (%)		Duration of maternity leave (weeks)	Maternity benefits (% of average wage)	Total duration of maternity and child care leave (weeks)
	Age < 3	Age ≥ 3			
Australia	15	60	0	0	52
Austria	4	68	16	100	112
Belgium	30	97	15	77	67
Canada	45	50	15	55	50
Czech Republic	1	85	28	69	
Denmark	64	91	30	100	82
Finland	22	66	52	70	164
France	29	99	16	100	162
Germany	10	78	14	100	162
Greece	3	46	16	50	42
Hungary	–	–	24	100	180
Iceland	–	–	–	–	26
Ireland	38	56	14	70	42
Italy	6	95	21.5	80	65
Japan	13	34	14	60	58
Korea	7	26	8.5	100	60.5
Luxembourg	–	–	16	100	68
Mexico	–	–	12	100	12
Netherlands	6	98	16	100	68
New Zealand	45	90	0	0	52
Norway	40	80	42	100	116
Poland	–	–	18	100	122
Portugal	12	75	24.3	100	128
Slovak Republic	46	90	28	90	184
Spain	5	84	16	100	164
Sweden	48	80	64	63	85
Switzerland	–	–	16	–	16
Turkey	–	–	12	66	12
United Kingdom	34	60	18	44	44
United States	54	70	0	0	12

B&vO –Tab 7.1 pg 141

The proportion of children aged 3-6 years *, who spend more than 30 hours per week in care outside the family (preschools) 2013 in %
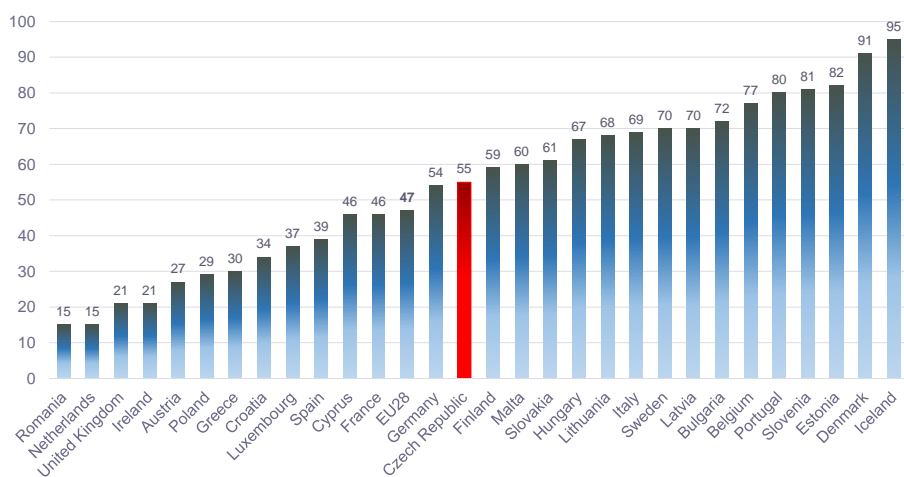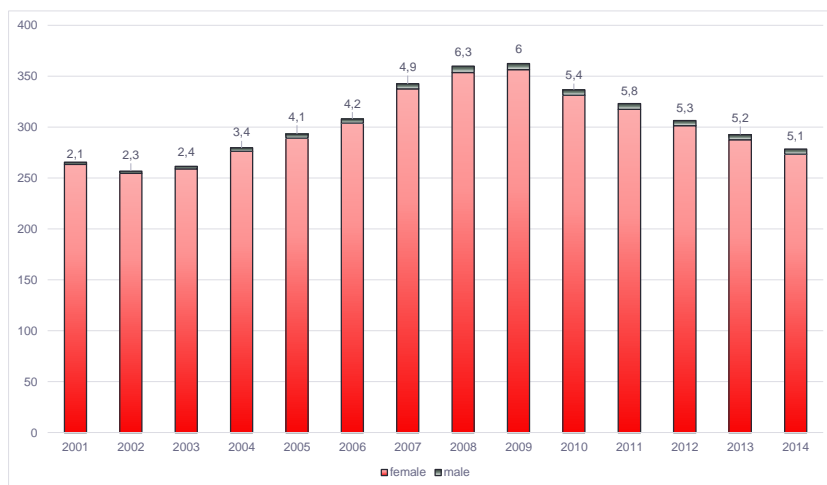
The number of weeks paid maternity and parental leave altogether in 2013
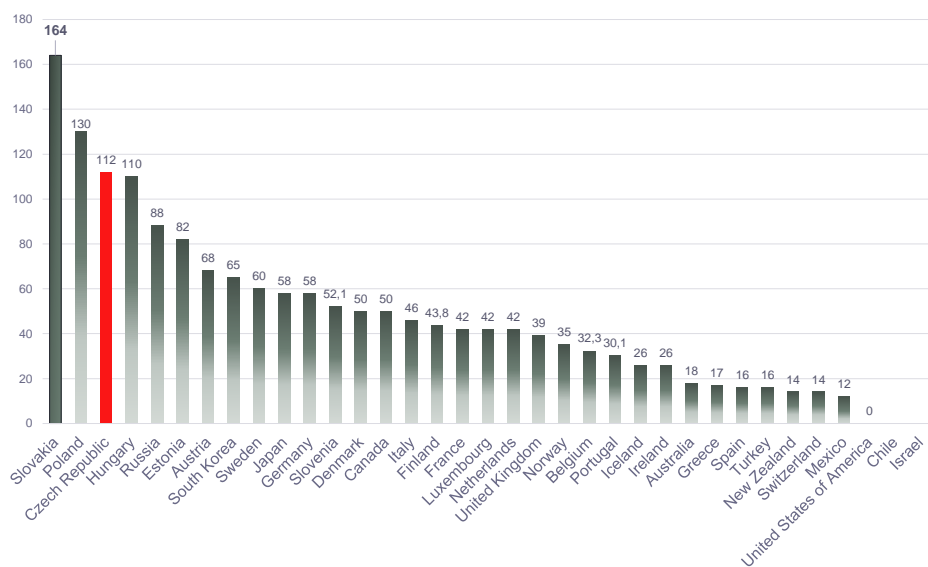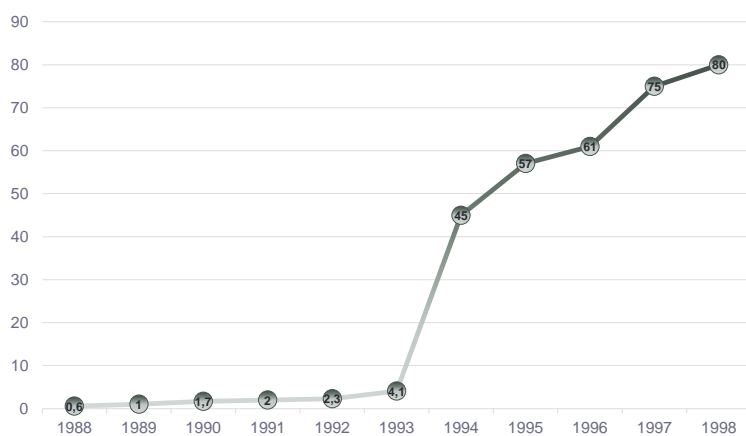

Expenditures on child, related with maternity / parental leave and birth grant in 2011, in USD PPP
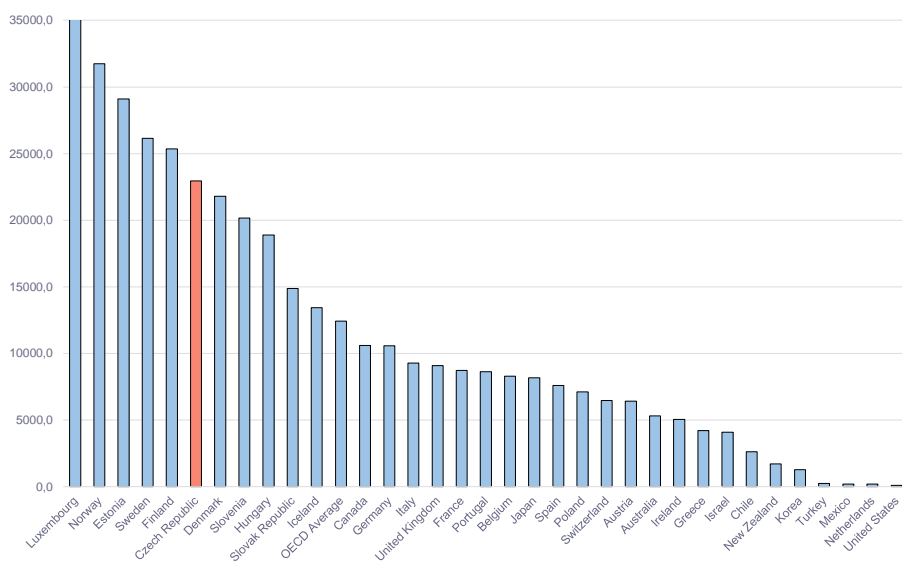
The number of recipients of parental allowance by gender (in thousands)

Using of parental leave by fathers in Norway in %

A case from Czech republic

- Implications of:
  - Shortening of parental leave
  - Decreasing of parental leave payment,
  - More (publically subsidized childcare facilities)

Some empirical evidence

- Schoenberg and Ludsteck, JOLE 2014: expansions in maternity leave coverage and mothers' labor market outcomes after childbirth
- Application of DiD
- Expansion in leave reduced mothers' post birth employment rates in the SR significantly, but LR effects are very small.
- Mullerova (2015 only wp) evaluation of 1995 Czech parental benefit reform which extended the payment of parental benefit to 4 years (from 3). DiD – a strong negative impact on mothers probability of return to work. Detrimental effects both in SR and LR.

OUR NEXT LECTURE – Tuesday 1.3.2016, 9.00-10.30

Pay and productivity; wage determination within the firm, incentive pay, efficiency wages