

Child care choices in Finland: coping with incomplete register-based data

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Introduction and motivation (1)

- Topical political debate and legislative proposals for Finnish child care policy, e.g.:
 - **Plans to cut** the subjective right to municipal child day care from parents who are at maternity leave, paternity leave, parental leave or child home care allowance.
 - Institutional child day care since 2013 a part of early education, it's alternative, child home care allowance a part of family policy
 - The children aged 3-6 years of age: now entitled to child home care allowance if they have a sibling < 3 year (now ca 30% on allowance)
 - **In the future: siblings in or out from child home care allowance?**
 - Womens' long child care periods at home, problems
 - Career interrupts, women's wage gap, low participation of men in child care at home
 - PROPOSAL: **Splitting child home care allowance period half between the parents, i.e. one parent could use the allowance only until the child 2 years instead of present 3 years of age**

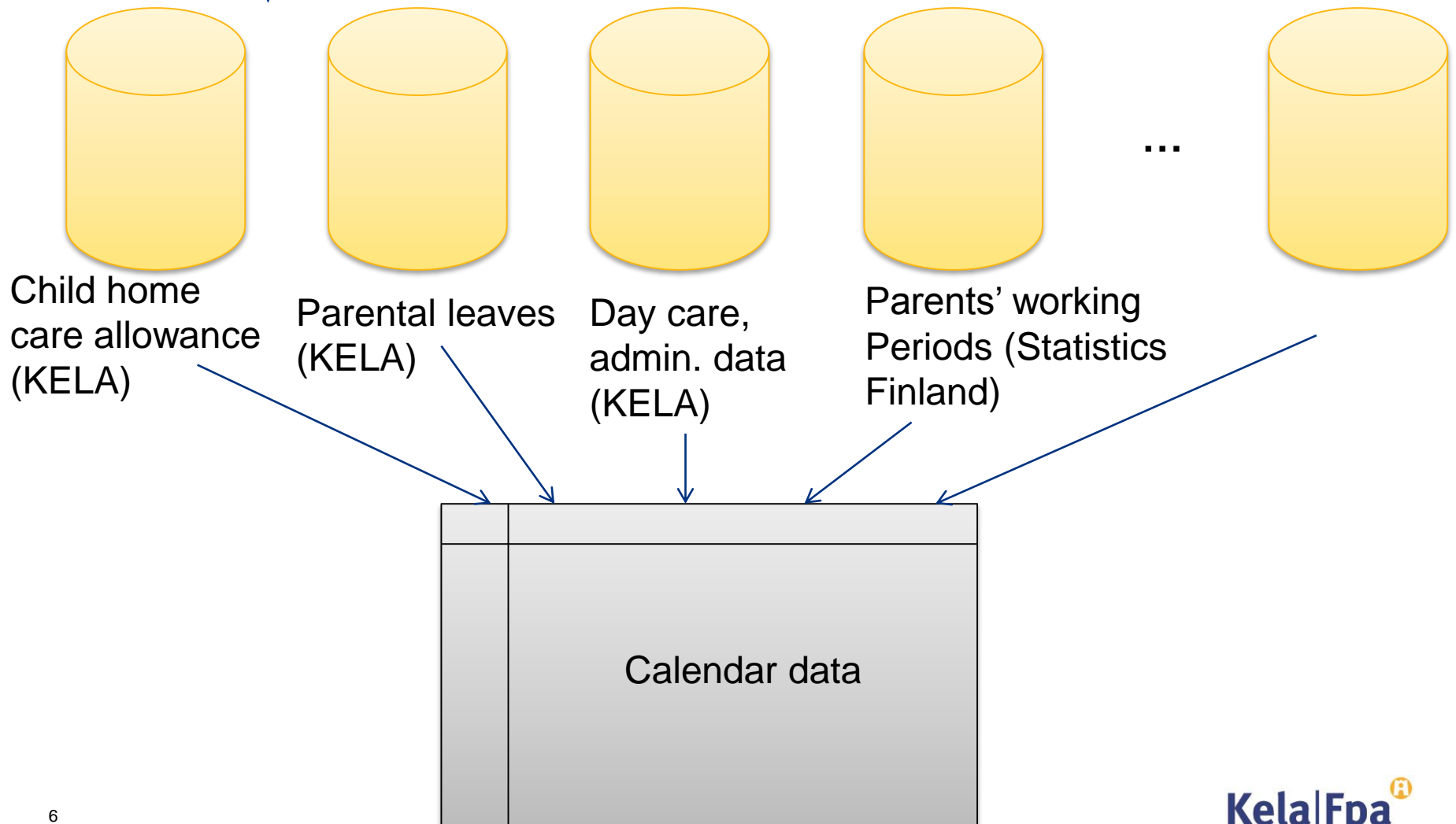
Introduction and motivation (2)

- Existing microsimulation models lag the ability to catch important eligibility rules concerning changes in children's age and chronological order in the family during the year
- SISU microsimulation model uses big register data (n=800 000), which has no information on public child day care
 - Need for a tool to help inputting child day care information to big model data
- **A solution: a child based calendar data?**
- Changing children's entitlements e.g. to child home care allowance enables to answer following questions:
 - Children and their months -> potential changes in demand of public child day care
 - Parents and their months -> potential changes in labour supply
- But... register-based data, that are available, are originally produced for other purposes than for specific research question

Problem with data...

- We aim to utilize existing data sources to construct a new in-home and out-of-home child day care model which would incorporate information from the perspectives of children, their parents and the family as a whole.
- Our challenge for analysis is that there is information about children's care spells in public day care but the information is inadequate.
- Very little systematic work has been done to validate the data or to produce systematic imputation or editing for various abnormal observations (Haataja and Juutilainen 2012).
- This is an attempt to utilize child based spell data.

Data sources



Building calendar data

- Different data sources were used to produce monthly child based calendar data:
 - 50 percent of mothers who gave birth in 1999-2009 in Finland, their spouses and children.
 - Periodical register spells data files:
 - Data concerning the child home care allowance, children's day care spells, parental leaves (Social Insurance institution, Kela)
 - Parents' working months (Statistics Finland)
- Monthly child-based data was merged and sorted according to priorities: many rows per each child
- Final calendar data: one row for each child
- Changes due to new eligibility rules among children transferred to the parents (and tax-benefit models)
- Assumption: If both parents are employed and child status is missing, then impute (=> status: child day care)

Example of priority principles

0.5 = "Unborn"

0.7 = "Unborn, mother is on maternity leave "

1.0 = "Child Home Care Allowance"

1.01 = " Means-tested part of CHCA", 1.02 = "Partial CHCA", 1.03 =
"Municipal supplement of CHCA"

1.9 = " Clawback of CHCA"

1.1 = "Private CHCA", 1.11 = " Means-tested part of private CHCA "

1.12 = "Partial private CHCA"

1.13 = "Municipal supplement of private CHCA"

2.0 = "Parental leave for newborn child"

3.0 = "Preschool"

3.5 = "Child's day care spell (Administ. file, Kela)"

4.0 = "Parental leave for sibling"

5.0 = "Imputed Child's day care spell"

9.0 = "Parents working"

. = "Missing";

Example of priorities for two children of one family with priority statuses for each month

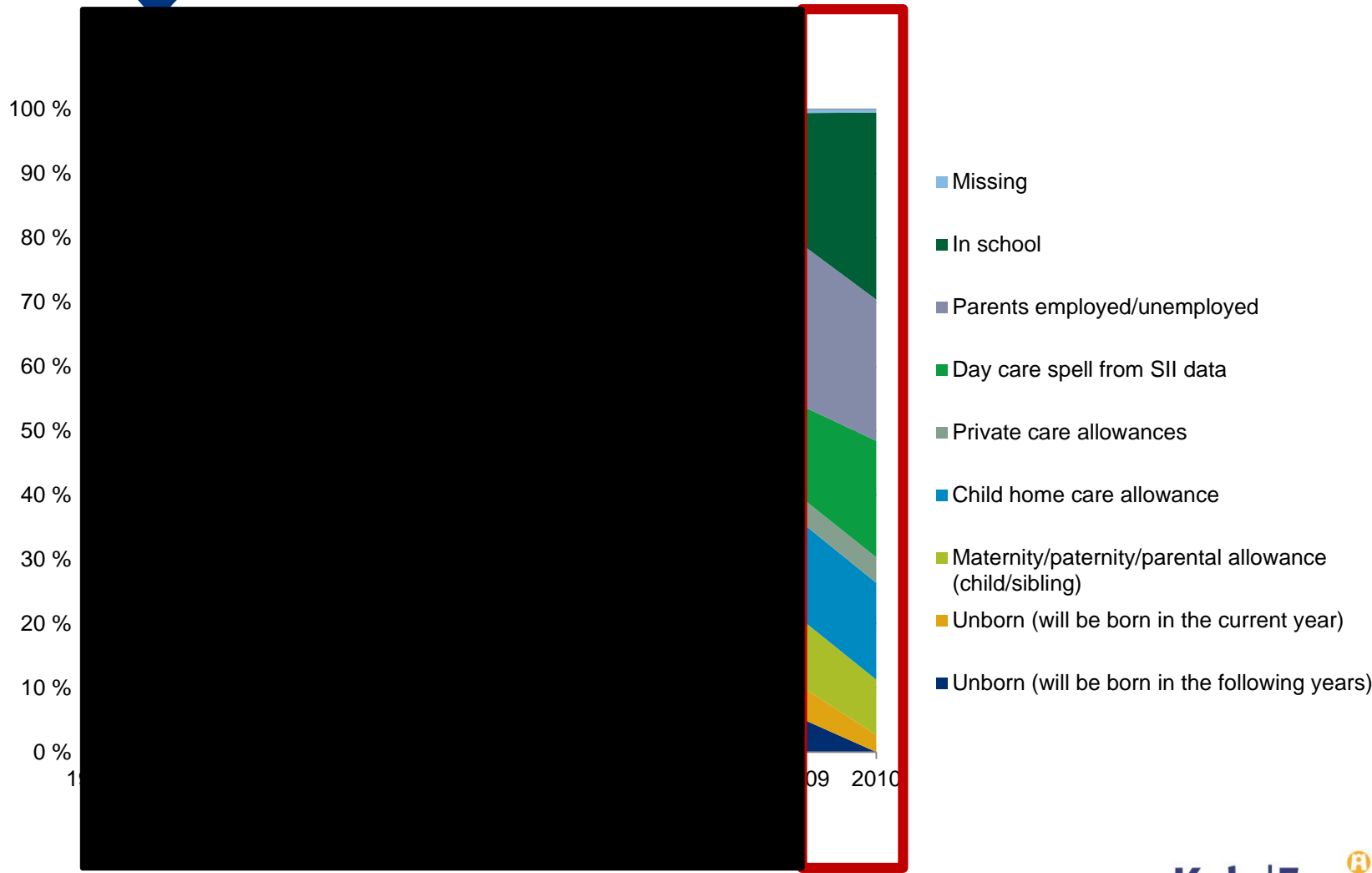
Family id	Child id	m1	m2	m3	m4	m5	m6	m7	...	m12
1234	1	1.0	1.0						...	
1234	1	1.01	1.01						...	
1234	1			3.5	3.5				...	
1234	1					4.0	4.0	4.0	...	4.0
1234	2	0.5	0.5						...	
1234	2			0.7	0.7				...	
1234	2					2.0	2.0	2.0	...	2.0

The priorities are 0.5 = unborn, 0.7 = unborn, mother is on maternity leave, 1.0 = Child home care allowance, 1.01 = Means-tested part of CHCA, 2.0 = parental leave for newborn child), 3.5 = child's day care spell, 4.0 = parental leave for sibling.

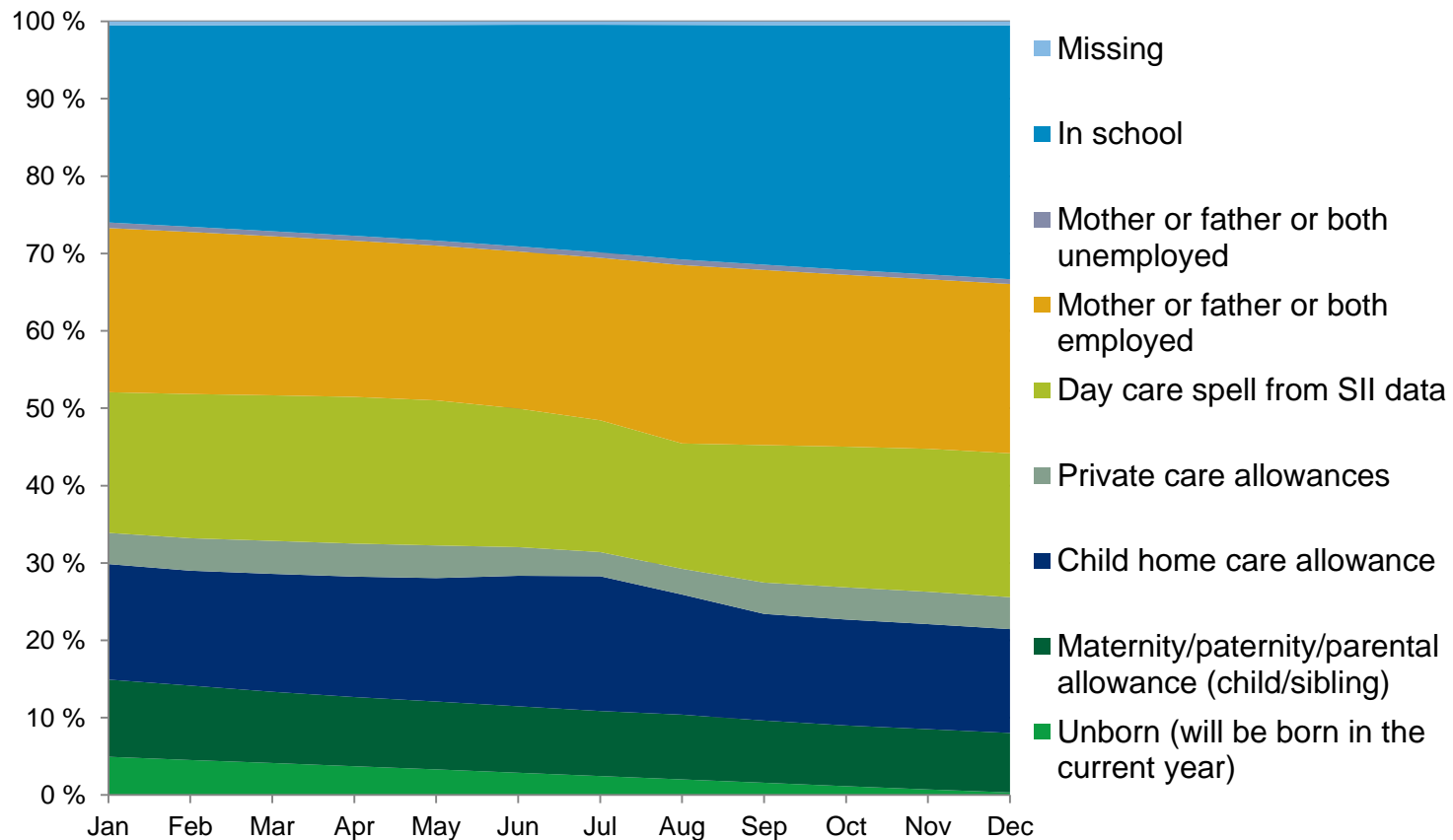
Example of final calendar data containing priorities for each month in 3 families

Family id	Child id	m1	m2	m3	m4	m5	m6	m7	...	m12
1234	1	1.0	1.0	3.5	3.5	4.0	4.0	4.0	...	4.0
1234	2	0.5	0.5	0.7	0.7	2.0	2.0	2.0	...	2.0
1235	1	9.0	9.0	9.0	9.0	9.0	9.0	9.0	...	9.0
1236	1	3.0	3.0	3.0	3.0	3.0	3.0	3.0
1236	2	1.0	1.0	1.0	1.0	1.0	1.0	1.0	...	4.0
1236	3	1.0	1.0	1.0	1.0	1.0	1.0	1.0	...	4.0
1236	4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	...	0.7

Statuses per year, %, for children born between 1999-2010



Statuses in year 2010 (%)



Children in child care from calendar data, year 2010, (Weighted to population level.)

	Children in child day care			
	In child day care (estimate), imputed calendar data	In child day care according to SII data	Both parents at work	Share of imputed values (%) in imputed calendar data
Jan	231 312	121 306	110 006	47.6
Feb	233 134	124 380	108 754	46.6
Mar	232 462	125 540	106 922	46.0
Apr	231 892	126 534	105 358	45.4
May	229 684	125 136	104 548	45.5
Jun	225 856	119 510	106 346	47.1
Jul	223 180	113 716	109 464	49.0
Aug	229 342	108 120	121 222	52.9
Sep	237 796	118 578	119 218	50.1
Oct	238 412	121 324	117 088	49.1
Nov	238 980	123 342	115 638	48.4
Dec	239 714	124 112	115 602	48.2

Imputed calendar data vs. other data sources

	Children (31.12.)	Child day care months / year	Number of children / year	Months / child
Child day care report	204 747	-	-	-
Imputed calendar data (LAPE)	239 714	2 791 764	322 010	8.67
Income Distribution Survey		1 920 163	229 575	8.36
Diff. to child day care report	+34 967 (+17 %)	-	-	-
Diff. to Income Distribution Survey	-	+871 601 (+31 %)	+92 435 (+29 %)	+0.31 (0.04 %)

Alternative policies in focus

- The Calendar spells and alternative child home care models utilize the year 2010 data (LAPE)
- The alternatives of the child home care allowance makes use of the Finnish static microsimulation model (SISU).
- Calendar was edited according to alternative policies:
 - The baseline model and calendar spells data on current rules was carried out for control and comparison
 - **Calculation 1:** CHCA was cutted for all siblings aged 3 years or older
 - **Calculation 2:** CHCA was cutted from children at the age 2 and their siblings
 - **Calculation 3:** child day care is simulated for siblings aged 3 years or older who loose CHCA in calculation 1 (with original calendar data and imputed calendar data)

Recipients (mothers/fathers), child home care costs, and number of months

	Recipients, Parents	Recipients, children	Costs, € (left)	Number of months of the children (left)
Baseline model	107 000	170 000	289 230 000	1 157 000
Calculation 1	107 000	123 000	264 653 000	818 000
Change total	0	-47 000	-24 577 000	-339 000
Calculation 2	86 000	137 000	205 626 000	813 000
Change total	-21 000	-33 000	-83 604 000	-344 000
- Unchanged	58 000	92 000	144 932 000	613 000
- Partly affected	28 000	45 000	56 659 000	199 000
- Fully affected	21 000	31 000		

Calculation 3: Child day care fees (million €)

(Fees paid by families)

Lape-data	Baseline	Calculation 3	Diff.
Calendar data	254	299	+45
Imputed calendar data	516	561	+45
SISU-model, IDS (full time and part time child day care)			
	Data	SISU-model	
	298	327	

Future work

- Calendar type data will be utilized in other projects with extensive and rich longitudinal data
- Improving the coverage of SISU-model
 - A tool to input child day care periods in big register based model data (800 000 persons), now totally missing

Thank you!