Assessment ("tax") units

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UNU-WIDER Training course

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Outline

1. Why we need and how we use them?

2. What are the Tax units?

3. Members of the Tax unit

4. Types of Tax units

5. How we create/name them?

1. Why we need and how use them?

- The implementation of countries' tax-benefit systems usually requires assessment units

- Different policy instruments, e.g. child benefits, require a specific type of the assessment unit

- EUROMOD assessment units also contain definitions of e.g. who is a dependent child, who is the head of the unit, income of the partner, etc. – additional information of the policy

- Calculations in functions are done for a specific assessment unit only

2. What are the Tax units?
Household members

Household

Single household

2. What are the Tax units?
Household members

Household

Partners

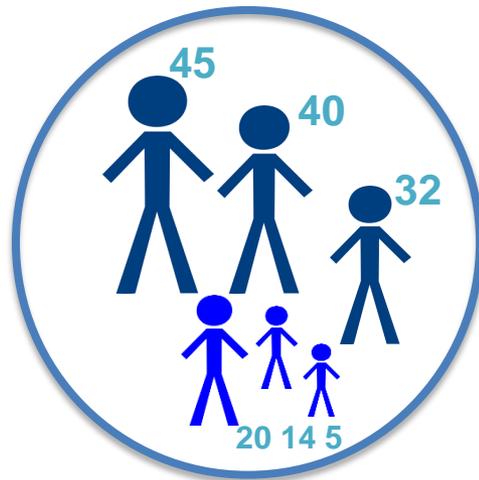# 2. What are the Tax units?
Household members

Household

Family
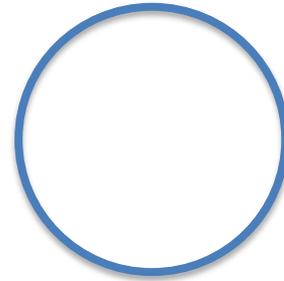
2. What are the Tax units?

Unit: group of household members to be considered together

Household

Family

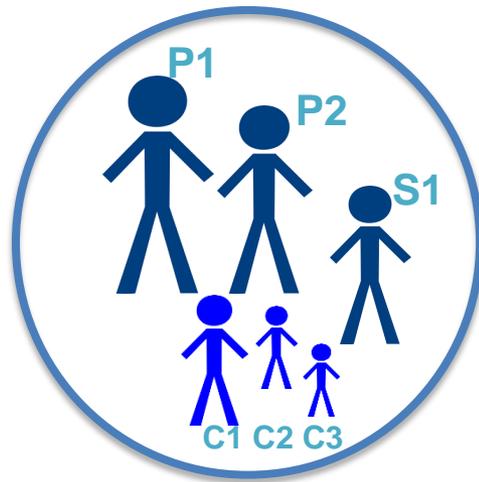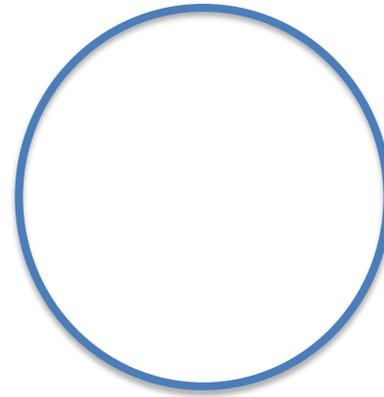One Tax unit

= the oldest member

2. What are the Tax units?
Unit: group of household members to be considered together

Household

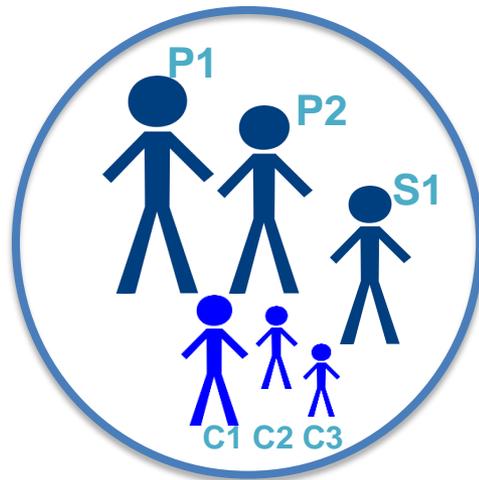Family

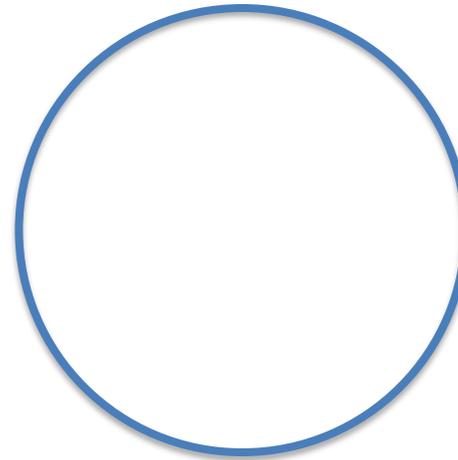Second Tax unit = partners (P1 and P2)

2. What are the Tax units?

Unit: group of household members to be considered together
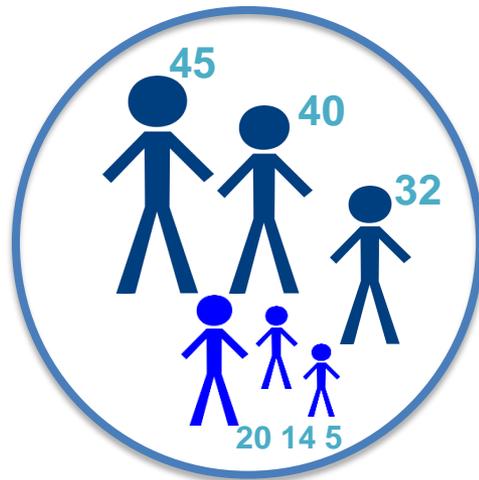
Household

P1
P2
S1

C1 C2 C3

Family

Third Tax unit = couple
and their children

2. What are the Tax units?

Unit: group of household members to be considered together

Household

45
40
32
20 14 5

Family

P1 P2 Ch_age=5

Fourth Tax unit = parents and children under 12

3. Tax units types

```
          ┌─────────────────┐
          │      Types      │
          └────────┬────────┘
       ┌───────────┼───────────┐
┌──────┴──┐   ┌────┴────┐   ┌──┴────────┐
│   HH    │   │   IND   │   │ SUBGROUP  │
└─────────┘   └─────────┘   └───────────┘
```

| all individuals of the household are in the same unit | each individual of the household forms its own unit | individuals determined by parameter members form an unit. The household may be split into several units of different size |
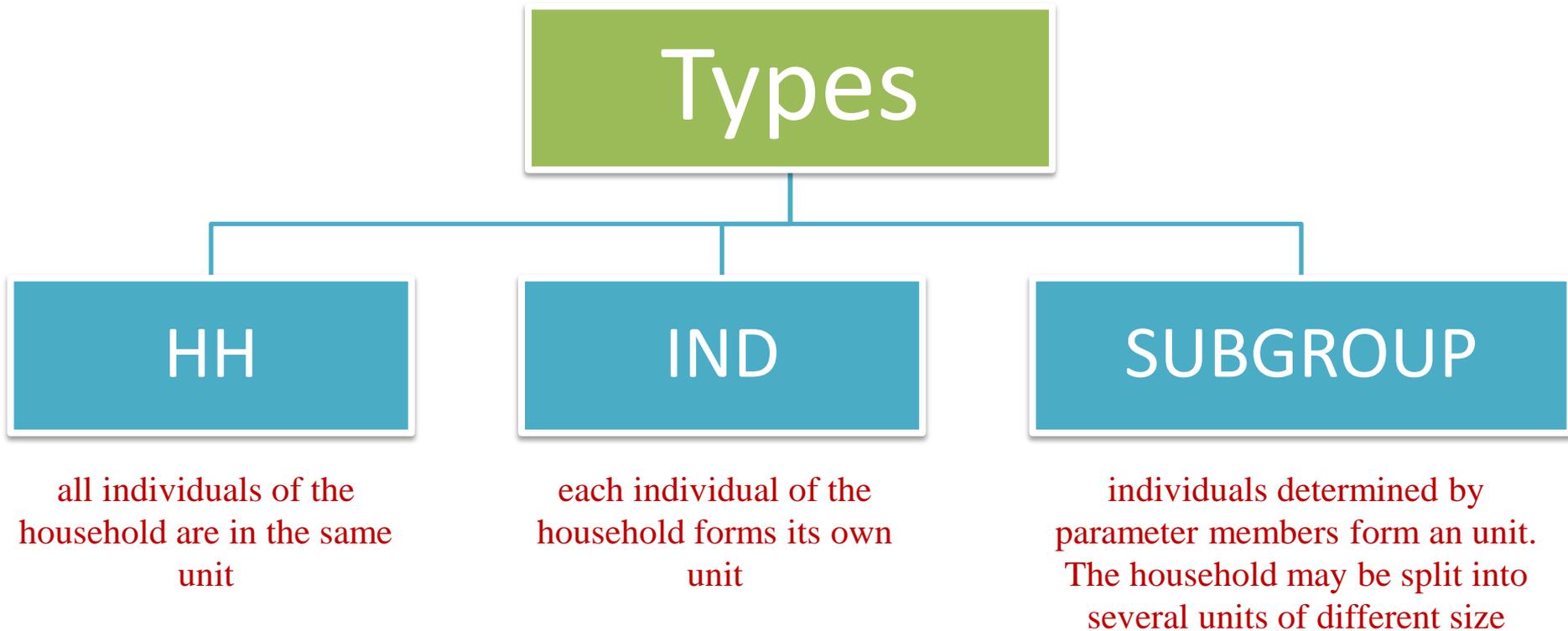
3. Tax units types
Examples

Description	Different types of IDs					dag	Tax unit`s types		
	idhh	idperson	idpartner	idmother	idfather		Household	Individual	Family SUBGROUP
Couple with children	1	101	102	0	0	30	A	A	A
	1	102	101	0	0	28	A	B	A
	1	103	0	102	101	3	A	C	A
	1	104	0	102	101	1	A	D	A
Couple without children	2	201	202	0	0	56	A	A	A
	2	202	201	0	0	55	A	B	A
Lone parent	3	301	0	0	0	35	A	A	A
	3	302	0	301	0	6	A	B	A
Single	4	401	0	0	0	25	A	A	A
Two singles living together	5	501	0	0	0	22	A	A	A
	5	502	0	0	0	23	A	B	B
Family	6	601	602	606	0	48	A	A	A
	6	602	601	0	0	45	A	B	A
	6	603	0	602	601	20	A	C	A
	6	604	0	602	601	15	A	D	A
	6	605	0	602	601	10	A	E	A
	6	606	0	0	0	70	A	F	B

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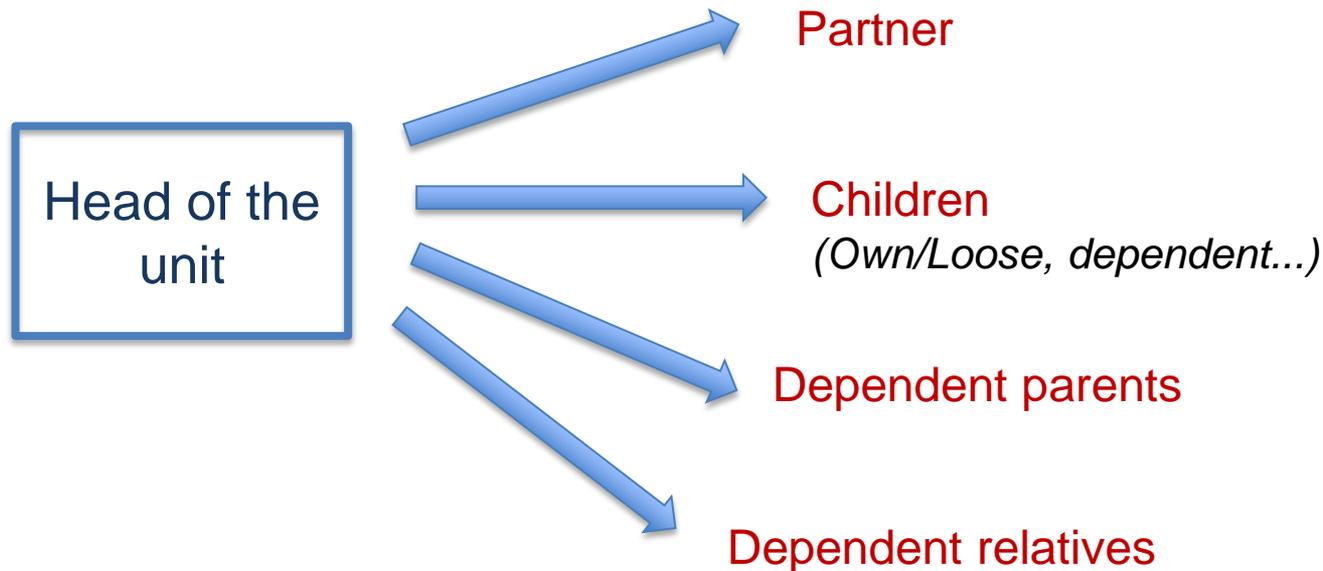INSTITUTE FOR SOCIAL & ECONOMIC RESEARCH

4. Members of the Tax unit
Head of the unit

Members usually define relations with respect to the head of the Tax unit
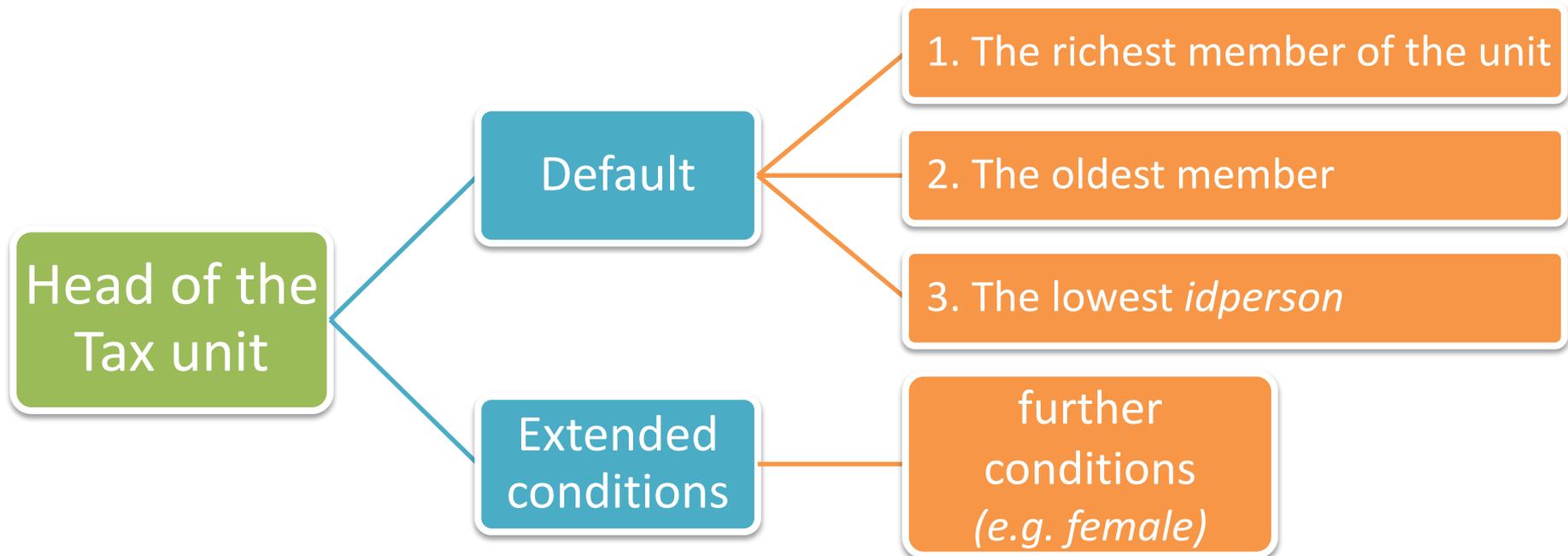
4. Members of the Tax unit

Members usually define relations with respect to the head of the Tax unit

4. Members of the Tax unit

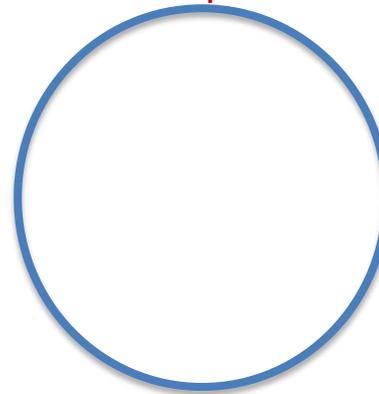Status of each member, i.e. relationship with the Head of the unit, is defined by a special Condition parameter

Household

Tax unit = two members who are partners

But who is Partner?

How we define his Partner?

Family

Head of the household   +   Partner

4. Members of the Tax unit

Condition parameters and default values fully documented in Help
(Summary of parameters for function DefTu)

Summary of parameters for function DefTu

allows for the definition of assessment units.
Note that parameters may use variables with the prefixes "head:" or "partner:". These prefixes can be used with variables only, not with incomelists or queries.
Also note that "{Default}" can be used to further define any default condition (as indicated in Default Value).

Function Specific Parameters

Name	Type	Optional	Single	Default	Description
Type	categorical	no	yes	n/a	Indicates the scope of the assessment unit. Possible values: - HH: all members of the household belong to one unit. - IND: each members of the household forms an own unit. - SUBGROUP: unit members are specified as indicated in the parameter Members.
Name	string	no	yes	n/a	Name of the assessment unit.
Members	string	yes	yes	n/a	Specifies which members of the household form a unit, if parameter Type is set to SOUBGROUP. Syntax: Status & Status & Status & ..., e.g. Partner & OwnChild. Possible values for Status: - Partner: defined by parameter PartnerCond - OwnDepChild: defined by parameter OwnDepChildCond - LooseDepChild: defined by parameter LooseDepChildCond - LooseDepChild: defined by parameter LooseDepChildCond - OwnChild: defined by parameter OwnChildCond - DepParent: defined by parameter DepParentCond - DepRelative: defined by parameter DepRelativeCond Note, that the Head is obviously always part of unit and (usually) relations are defined with reference to the Head.
HeadDefInc	incomelist	yes	yes	ils_OrigY	Incomelist used for determining who is the richest person in the assessment unit, see parameter ExtHeadCond.
ExtHeadCond	condition	yes	yes	!{IsDepChild}	Condition further defining the head of the assessment unit. The condition is &-linked with the following fixed head condition: {HeadDefInc>anyother:HeadDefInc} | ({HeadDefInc>=anyother:HeadDefInc} & {dag>anyother:dag}) | ({HeadDefInc>=anyother:HeadDefInc} & {dag>=anyother:dag} & {idperson<anyother:idperson})
PartnerCond	condition	yes	yes	{head:idperson=idpartner}	Condition defining who is a partner.
DepChildCond	condition	yes	yes	{0}	Condition defining who is a dependent child. The "real" default, i.e. if the parameter is not defined or set to n/a, is {0} (i.e. nobody is a child). However, setting the parameter to "{Default}" is interpreted as !{isparent}& {idpartner<=0}.

4. Members of the Tax unit

Some other examples of Condition parameters:

- DepChildCond: determines who is dependent child
- OwnDepChild: a son or daughter
- LooseDepChild: someone who is depend child but doesn't cohabit with parent/s

{Default}: default setting, can be combined with further specifications:

- conditions which refer to income
- conditions which refer to partner`s income
- conditions which refer to age
- conditions which refer to number of children…

Queries can be used to define income conditions

(e.g. GetParentIncome, GetCoupleIncome, …)

5. How we create/name them?
EUROMOD Modelling Conventions adjusted for this project

Where?

Policy spine

special policy TUDef_cc

Inside some other policy

using function DefTu

5. How we create/name them?

Standard types of tax units (usually defined the same in all countries)

1. Household: tu_household_cc (e.g. for Simpleland will be *tu_household_sl*)

	Policy		Grp/No	SL_demo
1	▶ ● **Uprate_sl**			on
2	▶ ● **ILDef_sl**			on
3	▾ ● TUDef_sl			on
3.1	▶ *fx* DefTu			on
3.2	▾ *fx* DefTu			on
3.2.1		Name		tu_household_sl
3.2.2		Type		HH
3.2.3		DepChildCond		{dag<=15} | (({dag<=18} & ({dec>=2} & {dec<=4})) & !{IsWithPartner} & !{IsMarried})
3.2.4		LoneParentCond		{Default} & !{IsMarried}

5. How we create/name them?

Standard types of tax units (usually defined the same in all countries)

2. Individual: tu_individual_cc (e.g. for Simpleland will be *tu_individual_sl*)

	Policy		Grp/No	SL_demo
1	▶ 🔵 **Uprate_sl**			on
2	▶ 🔵 **ILDef_sl**			on
3	▼ 🔵 TUDef_sl			on
3.1	▶ *fx* DefTu			on
3.2	▶ *fx* DefTu			on
3.3	▶ *fx* DefTu			on
3.4	▼ *fx* DefTu			on
3.4.1		Name		tu_individual_sl
3.4.2		Type		IND

5. How we create/name them?

Standard types of tax units (usually defined the same in all countries)

3. Family (one type of): e.g. for Simpleland will be *tu_sben_family_sl*

	Policy		Grp/No	SL_demo
1	▶ 🔵 **Uprate_sl**			**on**
2	▶ 🔵 **ILDef_sl**			**on**
3	▼ 🔵 **TUDef_sl**			**on**
3.1	▶ *fx* DefTu			**on**
3.2	▶ *fx* DefTu			**on**
3.3	▼ *fx* DefTu			**on**
3.3.1		Name		tu_sben_family_sl
3.3.2		Type		SUBGROUP
3.3.3		Members		Partner & OwnDepChild
3.3.4		DepChildCond		{dag<=15} | (({dag<=18} & ({dec>=2} & {dec<=4})) & !{IsWithPartner} & !{IsMarried})
3.3.5		LoneParentCond		{Default} & !{IsMarried}

5. How we create/name them?

Adding new Tax unit inside the policy TUDef_cc

Example: Simpleland

5. How we create/name them?

Example: Modifying existing Tax unit in Cyprus – *tu_bchba_cy*
so that dependent child is now a child who is 1 year old or less

Policy	Grp/No	cy_2015	cy_2015_reform
tudef_cy		on	on
DefTu		on	on
DefTu		on	on
DefTu		on	on
DefTu		on	on
DefTu		on	on
DefTu		on	on
name		tu_bchba_cy	tu_bchba_cy
type		SUBGROUP	SUBGROUP
members		Partner & OwnDepChild & LooseDepChild	Partner & OwnDepChild & LooseDepChild
DepChildCond		{default} & {dag=0}	{default} & {dag<=1}
NoChildIfHead		yes	yes
NoChildIfPartner		yes	yes
ExtHeadCond		{default} & {dgn=0}	{default} & {dgn=0}
StopIfNoHeadFound		no	no

5. How we create/name them?

Example: Using conditions which refer to income

- Usage of *Queries*
- Usage of *Footnotes*

Policy		Grp/No	DE_2015	Comment
fx DefTu			**on**	Used in bunnc_s, bsaoa_s, bsa00_s and bchot_s
	name		tu_family2_de	
	type		SUBGROUP	
	members		Partner&OwnDepChild&LooseDepChild	
	DepChildCond		{Default} & {dag<=25} & !{IsMarried} & {yemse#1<$bunnc_br + $heat_hh1 + $Rent_max_hh1}	
	AssignDepChOfDependents		yes	
	LoneParentCond		{IsParent}&!{IsWithPartner}	
	#_Level	1	tu_individual_de	

Tax unit in output file

func_DefTu	on
Name	**tu_tinfajt**
Type	**SUBGROUP**
Members	Partner & OwnDepChild & DepParent
PartnerCond	{Default} & {IsMarried}
DepChildCond	{Default} & {dag<25} & {il_tinty#1 <= 8000#y}
DepParentCond	{Default} & {dag>65} & {il_tinty#1<= 8000#y}
#1_level	tu_individual_es
AssignDepChOfDependents	yes
AssignPartnerOfDependents	yes
LoneParentCond	{default} & !{IsMarried} & {nDepChOfPerson > 0}

idhh	idperson	idpartner	idmother	idfather	dag	il_tinty	tu_tinfajt_headid	tu_tinfajt_ispartner	tu_tinfajt_isdepchild	tu_tinfajt_isdepparent	tu_tinfajt_isloneparent
1	101	102	0	0	65	0	101	0	0	0	0
1	102	101	0	0	60	0	101	1	0	0	0
1	103	0	102	101	30	0	103	0	0	0	0
1	104	0	102	101	28	147	104	0	0	0	0
2	201	202	0	0	29	1,007	201	0	0	0	0
2	202	201	0	0	25	891	201	1	0	0	0
2	203	0	202	201	3	0	201	0	1	0	0
2	204	0	202	201	2	0	201	0	1	0	0
3	301	302	306	305	40	1,831	301	0	0	0	0
3	302	301	0	0	38	0	301	1	0	0	0
3	303	0	302	301	10	0	301	0	1	0	0
3	304	0	302	301	15	0	301	0	1	0	0
3	305	306	0	0	70	0	301	0	0	1	0
3	306	305	0	0	70	0	301	0	0	1	0
4	401	0	0	0	80	0	402	0	0	1	0
4	402	0	0	401	38	3,502	402	0	0	0	1
4	403	0	0	401	34	2,324	403	0	0	0	0
4	404	0	0	402	11	0	402	0	1	0	0

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Thank you!