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MEDITA

A Corporate tax microsimulation model at PBO

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Outline

The Medita model objectives and framework

- **Data issues**
- **Model structure**
- **Validation**
- **An application to the recent tax changes**

Tax policy analysis on corporate sector

- Economic and distributional consequences of tax changes
- Tax revenue estimation and budgetary impact

MEDITA

A static multi period corporate tax model

Detailed tax simulations

- Business Tax (IRAP)
- Corporation tax (IRES)
- Social contributions (*under construction*)

At firm level

- tax base and net tax liabilities (yearly fiscal rules)
- Multi-period tax variables: interest deductions; losses and tax allowances carry forwards

Data sources

- Financial Accounting Data
2011-2017

Censuary data at company level
Non financial corporations

- Demographic characteristics
- Balance-sheets
- Ownership structure

- Aggregate Tax Statistics
2011-2017

- Corporation tax returns returns - Profit tax (IRES) and Business tax (IRAP)
- Consolidated Profit tax returns

- Administrative register
2015-2017

- Single corporation tax returns - Profit tax (IRES) and Business tax (IRAP)
- Consolidated Profit tax returns

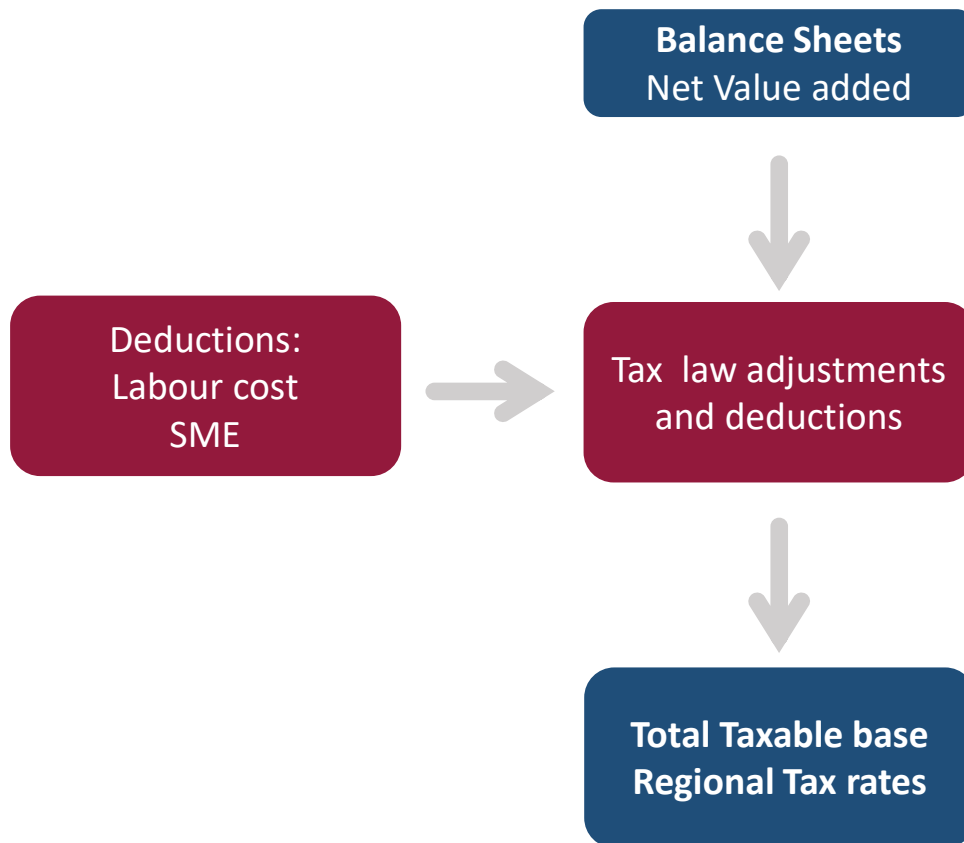
The state of the art

MEDITA (*) - **First version** (*born in 2015*)

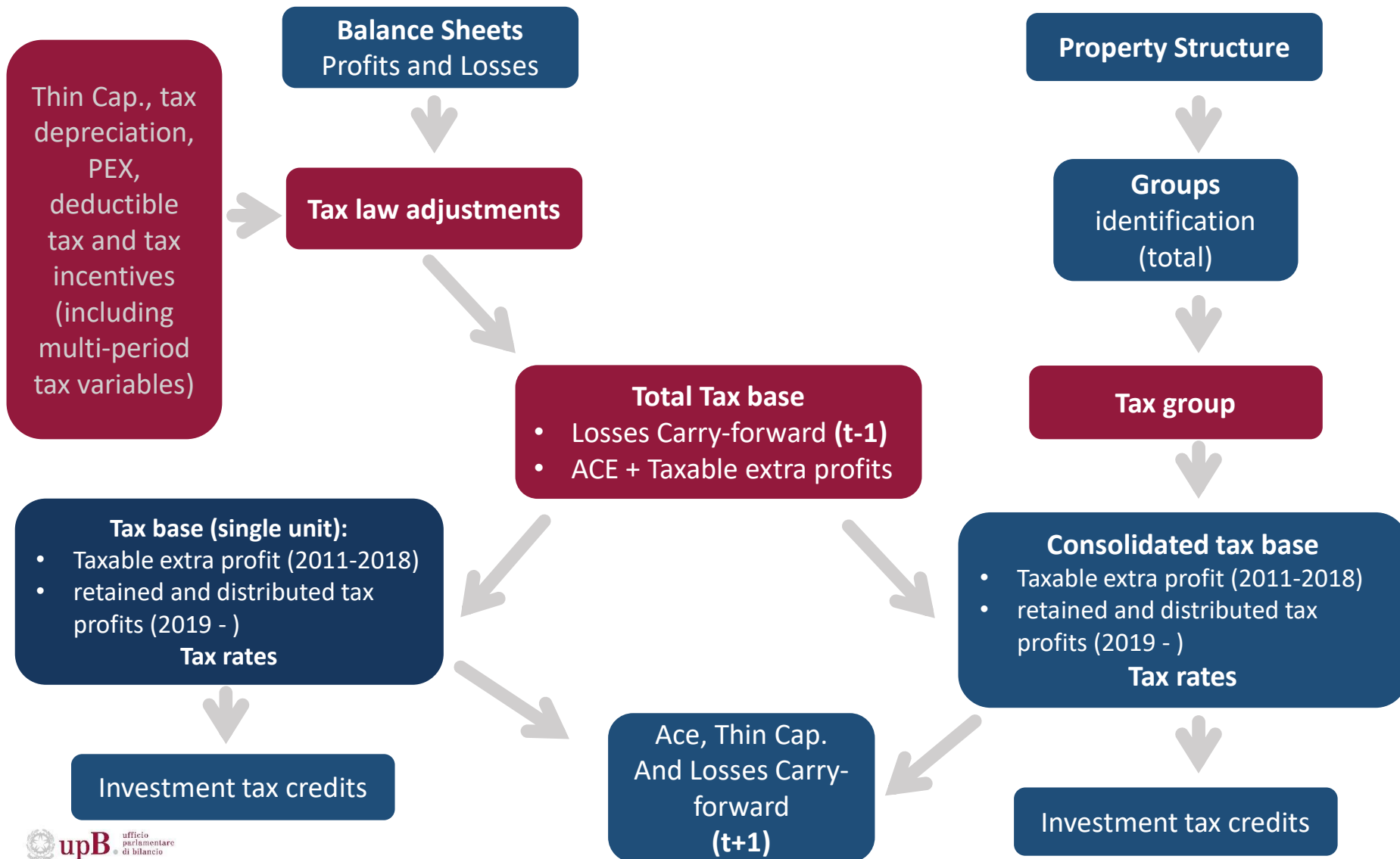
- **Financial Accounting Data + aggregated tax return data**
- **(excluding financial sector)**
- **Problems:**
Tax codes contain complex and detailed rules for the determination of the tax base and tax liability: necessary information details are not included in financial accounting firms data sets

(*) UPB microsimulation unit and the external support of M.G. Paziienza

IRAP



IRES



- **Positive and negative tax law adjustments**

At firm level (accounting data)

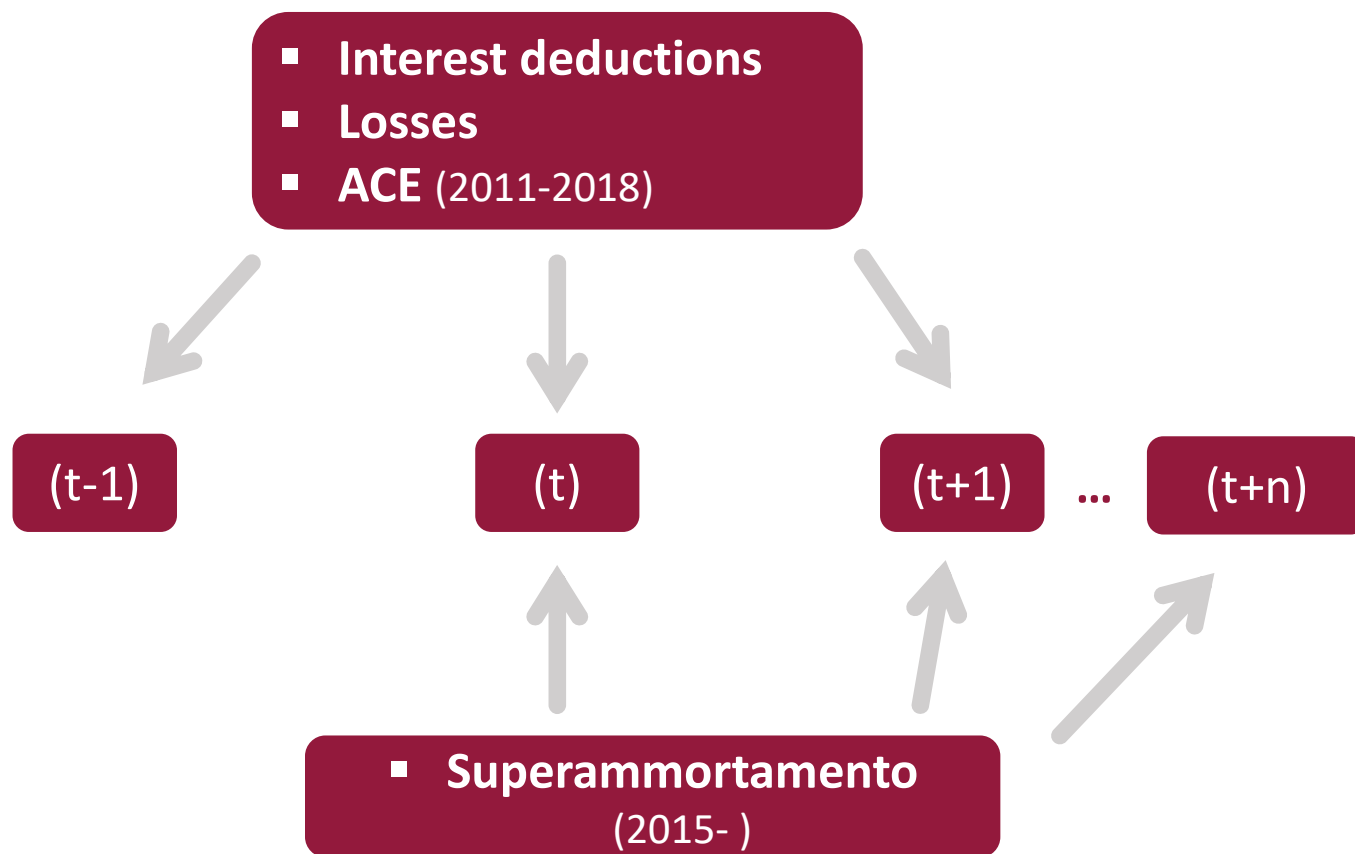
- + not deductible interest
- + capital loss PEX
- capital gains PEX
- dividends PEX
- tax deductions: Irap and IMU
- Patent box
- Superammortamento

+

At aggregated level (tax returns data)

**Residual tax law adjustment
Sector and dimension mean value**

- **Multi-period tax variables**



- **Property structure do not define tax group for consolidated taxable profits**

**Identification
(around 5200 groups)
Propensity score method**

MEDITA - **New** version (*born in 2019*)

Integration with Micro Tax Return Data (Administrative register): 2015 - 2016 and 2017 in progress

Improves precision and allows more comprehensive analysis overcoming the previous problems

- 2015-2016 residual tax adjustment **at firm level** and projected backward (2011-2014) and forward (2017-)
- Exogenous identification of Tax Groups for consolidated taxable base.
- Sectoral matching

Improves validation and assessment of budgetary impact

MEDITA - **New** version (*born in 2019*)

Using tax return data, a **new module** computes corporation tax **for financial sector** and allows simulations of some tax changes

(e.g. ACE removal from 2019)

The validation of the model

	Companies with tax returns	Net profits after tax adjustements	Net profit/loss after tax adjustements (positive)	Net profit/loss after tax adjustements (negative)
	%	%	%	%
Total	0.762	1.043	0.997	0.956
Agriculture	0.719	1.396	0.994	0.853
Manufacturing	0.837	0.981	0.990	1.009
Public utilities	0.789	1.047	1.034	0.987
Construction	0.713	1.094	1.016	0.929
Services	0.760	1.072	0.994	0.927
Fino a 250	0.749	1.765	1.018	0.809
da 250 a 1.000	0.885	1.076	0.992	0.850
da 1.000 a 2.000	0.944	1.041	0.998	0.880
da 2.000 a 5.000	0.958	1.070	1.020	0.846
da 5.000 a 10.000	0.966	1.055	1.010	0.842
da 10.000 a 50.000	0.970	1.029	1.005	0.892
da 50.000 a 250.000	0.968	0.978	0.999	1.109
oltre 250.000	0.963	1.010	0.975	0.856
Nord	0.882	1.036	1.008	0.910
Centro	0.821	1.040	0.980	0.840
Sud	0.571	1.019	0.987	0.898

The validation of the model

	Taxable base	Tax liabilities
	%	%
Total	0.968	0.969
Single	1.017	1.018
<i>Agriculture</i>	<i>0.895</i>	<i>0.896</i>
<i>Manufacturing</i>	<i>1.041</i>	<i>1.041</i>
<i>Public utilities</i>	<i>1.029</i>	<i>1.030</i>
<i>Construction</i>	<i>1.033</i>	<i>1.033</i>
<i>Services</i>	<i>0.997</i>	<i>0.999</i>
<i>Fino a 250</i>	<i>0.958</i>	<i>0.959</i>
<i>da 250 a 1.000</i>	<i>1.020</i>	<i>1.020</i>
<i>da 1.000 a 2.000</i>	<i>1.023</i>	<i>1.023</i>
<i>da 2.000 a 5.000</i>	<i>1.017</i>	<i>1.018</i>
<i>da 5.000 a 10.000</i>	<i>1.016</i>	<i>1.017</i>
<i>da 10.000 a 50.00</i>	<i>1.021</i>	<i>1.024</i>
<i>da 50.000 a 250.0</i>	<i>1.021</i>	<i>1.025</i>
<i>oltre 250.000</i>	<i>1.030</i>	<i>1.030</i>
<i>Nord</i>	<i>1.023</i>	<i>1.025</i>
<i>Centro</i>	<i>1.005</i>	<i>1.006</i>
<i>Sud</i>	<i>1.014</i>	<i>1.018</i>
Consolidated	0.867	0.867

Evaluating recent tax changes

At present

2011 – 2017

yearly and intertemporal analysis (on real economic and tax data)

2018 – 2022 (current legislation)

Each year fiscal rules apply to a constant population hypothesis (last year available)

MEDITA model in the PBO Publications

Working Paper no. 1/2016

Investment incentives in the 2016 Stability Act

2016 Budgetary Policy Report

- *Corporate tax rate cut from 2017 - (from 27.5% to 24%)*
- *Superammortamento*
- *Investment tax credit*

2017 Budgetary Policy Report

- *Changes in the ACE regime (2017 Budget Bill)*
 - a) reduction of the notional return on equity*
 - b) restriction of tax base relief*

2018 Budgetary Policy Report

- *ACE - reduction of the notional return on equity*
- *Changes in thin capitalisation rules*

2019 Budgetary Policy Report

Focus Paper no. 4 / 10 June 2019

Taxation of business income in the wake of the Growth Decree

The redistributive effects of the main measures adopted with the budget package for 2019:

- Abolition of the ACE,
- introduction of the new reduced rate on retained profits,
- increase in the deductibility of municipal property tax (IMU)
- and extra depreciation (Superammortamento).

For the entire sector of **non-financial corporations**, the combined effect of the measures reduces tax liabilities and the effective tax rates;

while for **financial corporations and banks** (accounting for around 1.5 per cent of all corporations and 15 per cent of total IRES revenue) the effect is of opposite sign and especially significant.

Tax changes in 2019 Budget Bill – Impact effects on tax revenue and implicit tax rate (2019)

	Tax revenues (% changes)					Tax rate changes				
	Abolition ACE	Reduced rate on retained profits	IMU (dal 20 al 50%)	Proroga super ammort.	Total net effect	Tax incentives on retained profits	Abolition ACE	Reduced rate on retained profits	IMU (dal 20 al 50%)	Proroga super ammort.
<i>Non financial Sector</i>										
Single	2.2	-2.0	-0.7	-0.3	-0.7	-3.0	0.6	-0.5	-0.2	-0.7
Consolidated	3.3	-2.5	-0.5	-0.2	0.1	-3.3	0.8	-0.6	-0.3	-0.8
Total	2.4	-2.1	-0.7	-0.3	-0.6	-3.1	0.6	-0.5	-0.2	-0.7
<i>Financial Sector</i>										
Single	9.5	0.0	-0.3	-0.2	8.9	n.d	2.6	0.0	2.5	n.d
Consolidated	7.1	0.0	0.0	0.0	7.1	n.d	1.9	0.0	1.9	n.d
Total	7.7	0.0	-0.1	-0.1	7.6	n.d	2.1	0.0	2.1	n.d

Smaller non-financial companies enjoy the greatest net benefit, thanks to the greater importance of the deduction of IMU, whose impact decreases as company size increases.

Examining the distribution of tax benefits by location of firms, the savings are more evenly distributed than those associated with the repealed ACE system, which on average favoured companies in the North and the Centre over those in the South. Altogether, the budget measures have had a more favourable impact in the South.

Tax changes in 2019 Budget Bill – Impact effects on tax revenue and implicit tax rate (2019) (Turnover classes)

	Tax revenues (% changes)					Tax incentives on retained profits	Tax rate changes			
	Abolition ACE	Reduced rate on retained profits	IMU (dal 20 al 50%)	Proroga super ammort.	Total net effect		Abolition ACE	Reduced rate on retained profits	IMU (dal 20 al 50%)	Proroga super ammort.
Single										
Fino a 100	2.9	-1.8	-2.3	-0.1	-1.4	-0.7	0.7	-0.4	0.0	-0.2
da 100 a 250	2.1	-1.8	-2.1	-0.2	-1.9	-1.8	0.5	-0.4	-0.2	-0.5
da 250 a 1.000	2.0	-1.8	-1.5	-0.3	-1.6	-3.1	0.5	-0.4	-0.2	-0.8
da 1.000 a 2.000	1.9	-1.8	-1.0	-0.3	-1.2	-3.7	0.5	-0.4	-0.2	-0.9
da 2.000 a 5.000	2.0	-1.9	-0.8	-0.4	-1.1	-3.8	0.5	-0.5	-0.3	-0.9
da 5.000 a 10.000	2.2	-2.0	-0.6	-0.3	-0.8	-3.5	0.5	-0.5	-0.3	-0.8
da 10.000 a 50.000	2.2	-2.0	-0.5	-0.3	-0.6	-2.7	0.6	-0.5	-0.2	-0.7
da 50.000 a 250.000	2.7	-2.2	-0.3	-0.3	0.0	-2.8	0.7	-0.5	-0.2	-0.7
oltre 250.000	2.3	-2.1	-0.3	-0.1	-0.2	-2.6	0.6	-0.5	-0.1	-0.6
Nord	2.5	-2.0	-0.7	-0.3	-0.5	-2.8	0.6	-0.5	-0.2	-0.7
Centro	2.0	-1.9	-0.8	-0.3	-0.9	-3.0	0.5	-0.5	-0.2	-0.7
Sud	1.6	-2.0	-0.7	-0.4	-1.5	-4.0	0.4	-0.5	-0.2	-1.0
Total	2.2	-2.0	-0.7	-0.3	-0.7	-3.0	0.6	-0.5	-0.2	-0.7

Thanks for your attention !



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