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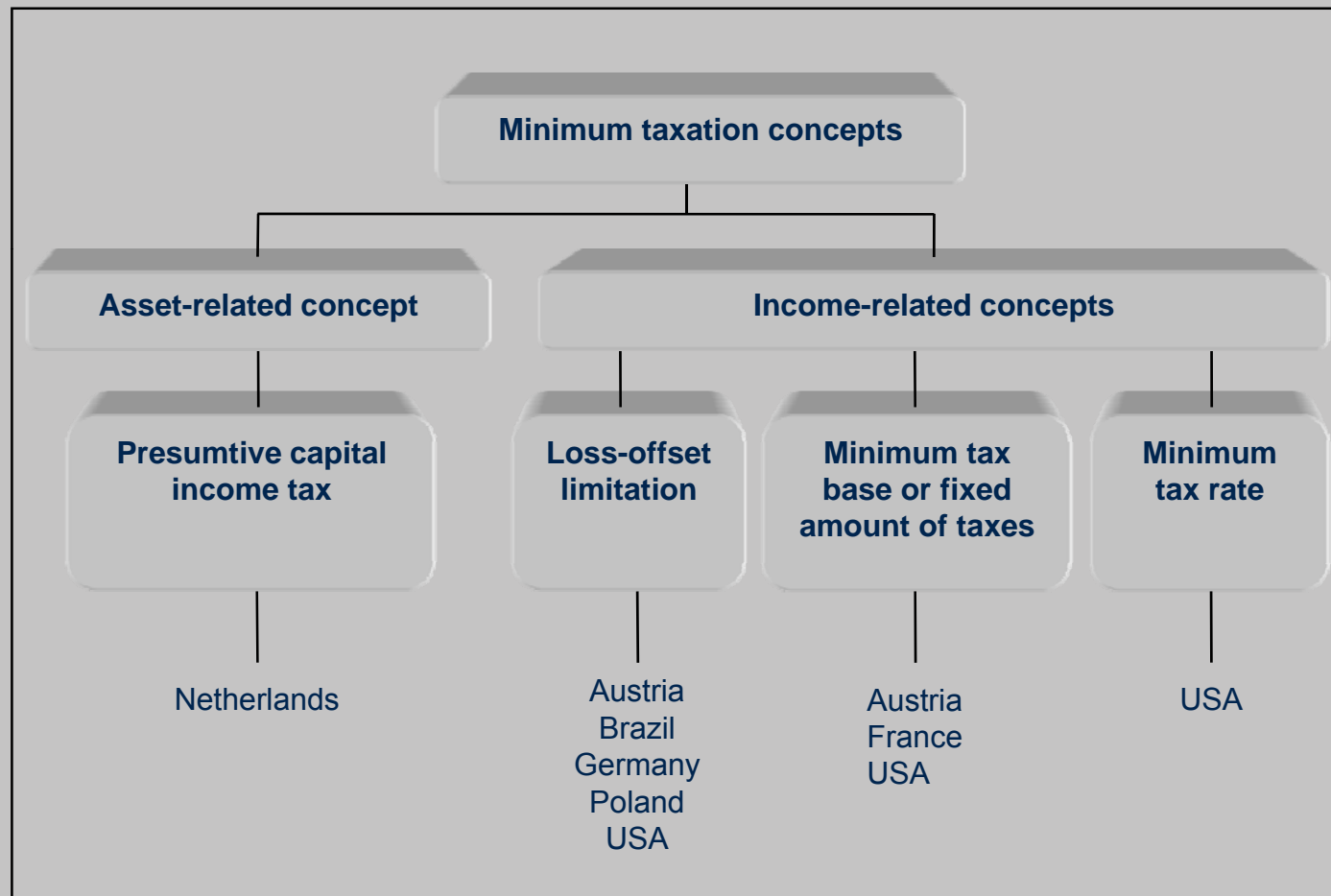
Minimum Taxation Concepts and their Impact on Corporate Investment Decisions

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Claudia Dahle and Caren Sureth
University of Paderborn

Minimum Taxation Concepts





Agenda

1. Introduction
2. Agenda
3. Literature
4. Research Question
5. Model
6. Analysis Results
7. Conclusion



Literature

Asymmetric taxation

Shevlin (1990); Eeckhoudt/Gollier/Schlesinger (1997);
Niemann (2004)

Loss-offset limitation

Auerbach (1986); Auerbach/Poterba (1987); Lyon (1990);
Niemann (2003, 2006);

Alternative minimum tax (USA)

Bernheim (1989); Lyon (1995, 1997);
Burmam/Gale/Rohaly (2003); Feenberg/Poterba (2004)



Research Question

How do the considered minimum taxation concepts affect corporate real and financial investments?

- Are minimum tax concepts distortive?
- Do the concepts cause a tax paradox?
- Do all concepts distort investment decisions in the same way?



Model I

- **Algebraic model** for all underlying countries
(similar to Niemann 2003, 2004)

$$G_{\tau,t} = (1-\tau) * W_t + MC_t - \varepsilon$$

with

$$W_t = \max \{0; TI_t - (\delta * L_t) - (MC_t / \tau); \alpha * (TI_t - \beta) - L_t - (MC_t / \tau); \gamma\},$$

where

- α : minimum tax rate
- β : base amount
- γ : minimum tax base
- δ : loss offset rate
- ε : alternative minimum tax liability
- MC_t : minimum tax credit



Model assumptions I

- Dynamic model of capital budgeting
- objective value = after-tax future value
- Corporations, only firm level
- Full retention
- Constant rate of return ($i = 0.1$)
- Uniform tax rate ($\tau = 30\%$)
- Uniform tax base for all countries
- Linear depreciation
- Reference model = complete loss offset
- Loss carry-forward is given exogenously (L_t)



Model assumptions II

- Decision alternatives:
 - Real investment
 - Financial investment
- Identical pre-tax future values in $T=10$

Constant CF }
Increasing CF } 1. Deterministic analysis
Decreasing CF } 2. Stochastic analysis (normally distributed CF)

- Interest effect
 - Expiration effect
 - Tax rate effect
 - Depreciation effect
- } Minimum taxation effect



Results of the analysis I

	FV FI	FV RI const.	FV RI incr.	FV RI decr.
Complete I-o	17.51	17.68	18.42	16.95
Austria	17.21	17.32	17.64	16.78
Brazil	16.97	17.10	17.50	16.57
Germany	17.26	17.37	17.67	16.78
France	17.24	17.35	17.65	16.81
Poland	17.26	17.30	16.31	16.78
USA	17.25	17.36	17.67	16.81

Table 1: Future values of financial and real investments in €M

- classical tax paradox

Results of the analysis II

	$\Delta_{1 FI}$	$\Delta_{2 RI}$	$\Delta_{3 RI-FI}$
Complete I-o	100%	100%	0%
Austria	98.28%	97.96%	-0.32%
Brazil	96.95%	96.72%	-0.24%
Germany	98.57%	98.26%	-0.31%
France	98.49%	98.15%	-0,33%
Poland	98.57%	97.88%	-0.68%
USA	98.52%	98.21%	-0.31%

Table 2: Minimum taxation vs. complete loss-offset for constant cash flows

- all concepts discriminate real investments
- minimum taxation concept effects run counter to the effect from depreciation



Results of the analysis and the sensitivity analysis I

- A distortion caused by MTC only occurs in case of additional tax base influencing effects like the depreciation effect
→ runs counter the depreciation effect
- The greater the depreciation effect the greater is the MTC effect
→ increasing cash flows cause the biggest distortion

Results of the analysis and the sensitivity analysis II

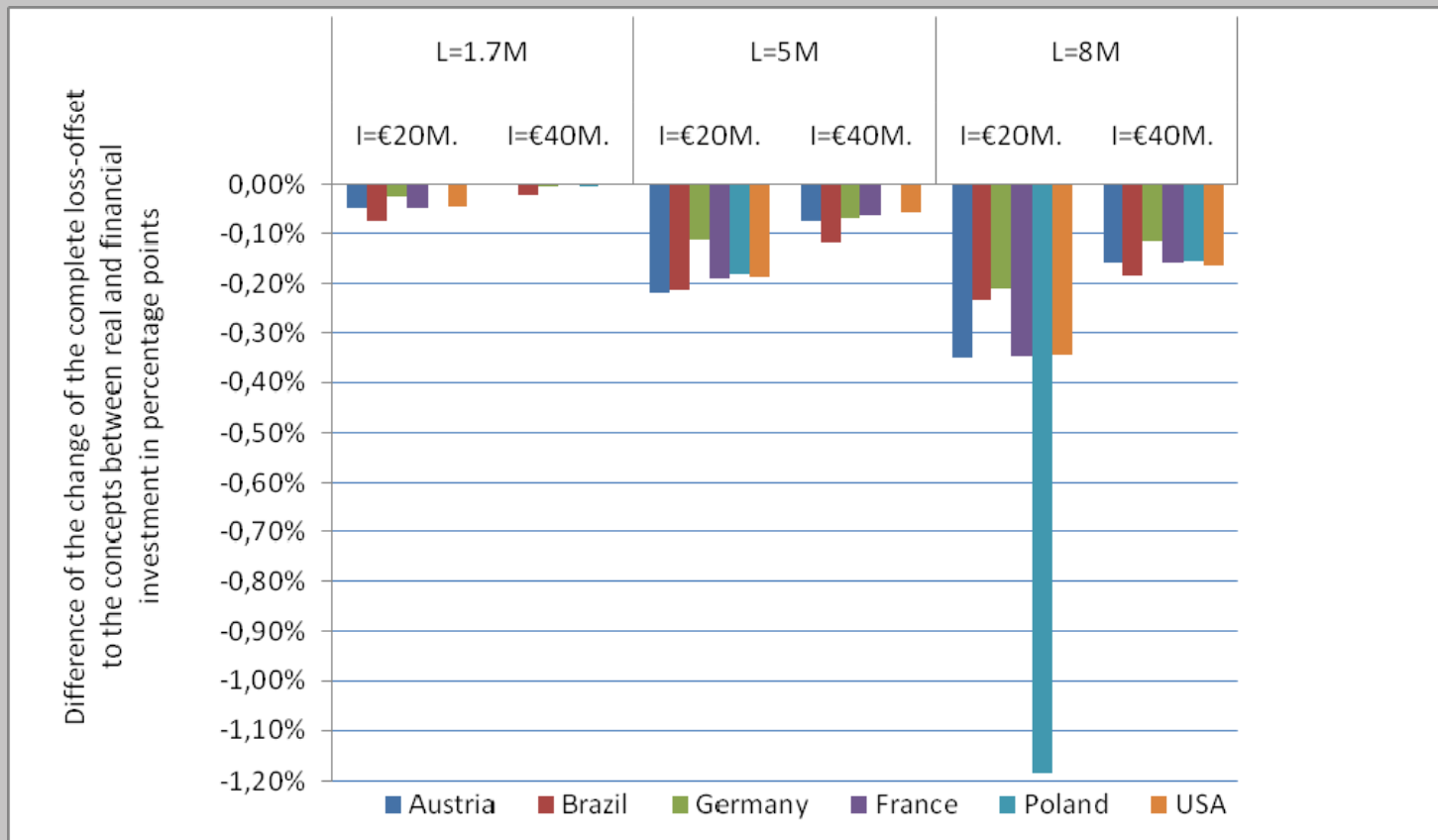


Figure 1: Influence of minimum taxation on the relation of financial to real investments in case of increasing L_0 for constant cash flows and an initial outlay of €8M and €40M



Conclusion



Contribution

- Comprehensive equation to compare various concepts
- Analysis of pure minimum tax effects on real and financial investments



Current Research

- Group taxation
- Cross-border operations
- Simulation with real data



Thank you for your attention!