

Report on Master Thesis

Institute of Economic Studies, Faculty of Social Sciences, Charles University in Prague

Student:	Šárka Štěpaníková
Advisor:	Milan Ščasný
Title of the thesis:	Environmental Cost-Benefit Analysis: Social Time Discount Rate (or "Pure" Rate of Time Preference) Determination in Social Discounting of Public Projects/Policies in the Czech Republic

OVERALL ASSESSMENT (provided in English, Czech, or Slovak):

The thesis introduces into the determination of an optimal social discount rate, to be applied in cost-benefit analysis for public projects. Two findings stand out: The author's values are consistently less than SDRs suggested by the European Commission (4% for policies and 5.7% for investment projects), and the rates feature substantial variation depending on methodology.

The thesis is predominantly a survey in the applied field (following chiefly Pearson et al, 2006, and Boardman et al. 2006) with a focus on social discounting in CZ. The author is working with the state-of-the-art concepts of applied CBA, yet maintains the thesis at a technically non-demanding level. The true challenge in this field seems to find sound data to apply various discounting concepts correctly. Applications for Czech data follow mainly paper by Kubiček and Vítek (2009), and the findings are dispersed across Chapter 4 with many references to the original sources, so it is a bit difficult to trace value added of the author. Overall, the thesis is acceptable and **I recommend grade 2.**

I only have a single major point: The use of market interest rates as a primary way of market SDR determination is surprisingly almost entirely disregarded (with a shallow half-page discussion on p. 51). It's absolutely correct to point out to how taxes and credit constraints impede derivation of time preference from market interest rates, but similar objections have been raised and effectively dealt with in the other market-determination methods. It's premature to avoid obstacles by concluding "...there is no obvious choice for SDR and this model therefore cannot be used." (At this point, I don't understand why an interbank interest rate (or even an overnight lending rate) have been mentioned as proxies for a discount rate; I'd be surprised if any sensible economist would advocate that.)

There is a couple of minor issues:

- In the thesis, the difference between social discount rate vs. social time discount rate is not very clear. What is the dominant focus of the thesis? The title suggests the latter, but clearly the content points to the former. In the abstract: "We search for the most appropriate way of the SDR determination, value the social time discount rate and the SDR in general." How does "SDR determination" differ from "SDR in general"? Interestingly, discussion on pure social time discount rate is left to end of Chapter 4, on pages 87-90. Notation is not helpful either; in summary on pp. 93-94, you write "SDR = d", then (in words) "SDR = SMRTP", next we have (in words) "d = STDR", and finally "SDR = SMRTP = d + eg".
- In theory part, there are sometimes not quite correct statements. For instance: "The markets value a monetary unit now more highly than a monetary unit in the future since capital is productive and thus a monetary unit's worth of resources now will generate more than a monetary unit's worth of goods and services in the future." (p. 31) One obviously has to account for depreciation.
- On p. 43 you claim "neoclassical economists... affirm that economic growth does not have any limits" and define neoclassical economics in a footnote, stating: "Neoclassical economics is the conventional mainstream economics which is founded on the concepts of economic efficiency and optimality, using tools of marginal analysis (Markandya, Perelet, Mason, Taylor, 2001). The neoclassical "rules of the game", however, lead to depletion of natural capital." Who of so-called "neoclassical" economists says that in 10,000 years we'll have unbounded growth? It's strange for me to read a rather vague definition of economics as such (why call it mainstream and conventional?) in a middle of a CBA-thesis that by its definition presumes the standard economics axioms (utility functions) and advocates Kaldor-Hicks efficiency.

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- The trivial intertemporal optimization on p. 47-50 doesn't belong to a Master thesis.
- Regarding zero discounting, the disagreement is essentially a question on the estimate of substitution of natural capital by another factor of production, or an improvement in technology that would compensate for a lack of natural capital. This is a purely empirical issue that can be discussed in short and medium term horizon, not an ideological issue.
- You mention Harberger on p. 52 and 53, but we don't know why and what it points to: It seems to be just an unreferenced copy+paste from textbook by Boardman et al (2006). (Your reference doesn't include coauthors by the way, neither here nor for Pearce et al. 2006).
- I'd like to know more how market determination of the discount rate is complicated by the international finance perspective, i.e. if a country is in a large deficit or surplus on the capital account, hence disequilibrium may exist, and exchange rates exhibit volatility.
- Your interpretation of the difference to the EC recommendations is as follows: "Unlike the EC we, firstly, claim that the SDR determined for public projects should not differ from the one determined for public policies since they are both created for a good of citizens." (p. 95) Then you follow arguing that only time horizons differ for these two classes of projects, which may manifest only in different g . This suggests that time horizon is irrelevant for you, but this is inconsistent with your classification of rates into 3 cases (-30, 30-50, 50+) by the length of horizon.

SUMMARY OF POINTS AWARDED (for details, see below):

CATEGORY		POINTS
Literature	(max. 20 points)	15
Methods	(max. 30 points)	25
Contribution	(max. 30 points)	17
Manuscript Form	(max. 20 points)	18
TOTAL POINTS	(max. 100 points)	75
GRADE	(1 - 2 - 3 - 4)	2

NAME OF THE REFEREE: Martin Gregor

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