



Martin-Luther-Universität  
Halle-Wittenberg



# Beiträge zum Transnationalen Wirtschaftsrecht

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Economic Analysis of Tax Law  
- Current and Past Research Investigated  
from a German Tax Perspective -

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**Economic Analysis of Tax Law**  
**– Current and Past Research Investigated from a**  
**German Tax Perspective –**

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## A. Introduction

### I. Preface

A remarkable incident took place in 1967 when the American scholar of jurisprudence *Calabresi*, presented the economic analysis of law for the first time in Germany. After he finished his speech, one German Professor noted that the topic sounded very interesting but had nothing do with the science of law. *Calabresi's* astonishing response was: "Not yet".<sup>1</sup>

*Calabresi's* insights would prove true in the years to come. In the meantime, the economic and law approach has become a constituting element of higher legal and economic education throughout the United States university system. Moving slowly but steadily, economic analysis of law more and more is integrated into German economic and legal scholastic thinking as well. Further, the economic analysis of law has been the subject of several international journals and conferences and since 1993 the ERASMUS-Program "Law and Economics" enables transnational studies.

In the first years, the investigation was limited to fields such as Contract Law, Tort Law, Pollution Law, Antitrust Law and Property Law. Well-known scholars like *Richard A. Posner* and *David Friedman* argue that the economic analysis of law can be applied to any law. Indeed, new studies evolved, covering the neglected areas like Family Law or Employment Regulation Law.

Relatively little research has been conducted so far in the field of Tax Law, especially as far as German Tax Law is concerned. Therefore, this research paper is designed to fill the gap in this particular area.

The economic analysis of law is an approach to explain human behavior and is routed in the neoclassical model. The neoclassical model assumes that individuals are rational and completely informed, that property rights and contracts are comprehensively defined and that there are no transaction costs. If the transaction costs are zero, institutions are unnecessary and therefore assumed as exogenously given.<sup>2</sup>

New economic lines of thinking (such as "new institutional economics") criticize the assumptions of the neoclassical model. Their deviations from the neoclassical perception are generally characterized as follows:

1. Institutions, such as laws, contracts or customs are no longer regarded as neutral; rather they determine human behavior as well.
2. Transaction costs are real and cannot be neglected.<sup>3</sup>
3. Individuals have different goals and are limited in their rational interest maximization by institutional structures.

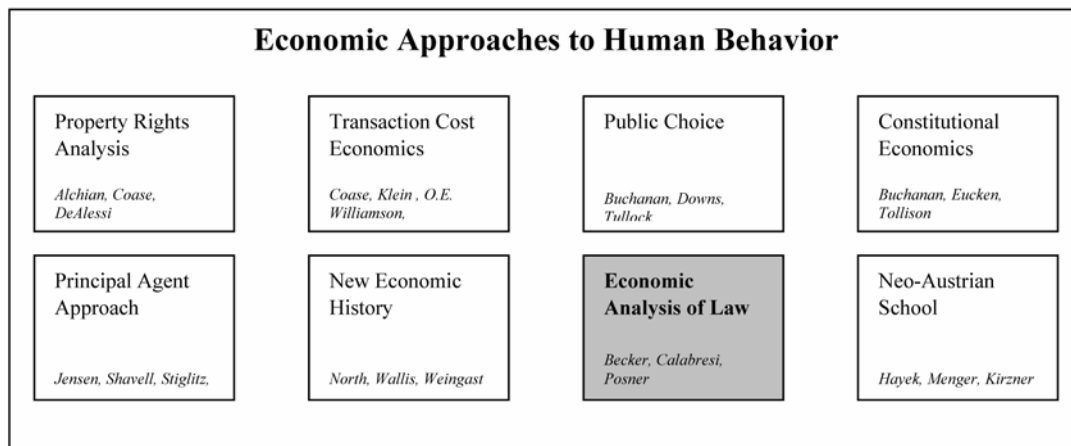
Figure A-1 illustrates the various strands of economic approaches to human behavior and their main scholars.<sup>4</sup> It clarifies that economic analysis of law is just one approach to explain human behavior among a multitude of frameworks.

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<sup>1</sup> Cf. *Burow*, JuS 1993, 8 (8).

<sup>2</sup> In such a world the corporate veil does not exist, for instance managers of corporations are fully guided by the wants of the shareholders.

<sup>3</sup> Wallis and North estimated that the transaction cost amount to 50% of the GDP. *North/Wallis*, Measuring the Transaction Sector, in: Engerman/Gallman (eds.), Longterm Factors, 95. Quoted from *Bindseil/Richter*, Institutionenökonomik, in: Berthold (ed.), Allgemeine Wirtschaftstheorie, 318 (325).



*Figure A-1: Various Strands of Economic Approaches to Human Behavior. Own illustration.*

## II. Organization of the Study

The analysis begins in Chapter B with an explanation of the fundamental characteristics of the economic analysis of law. It will explain its objectives, interconnections, historical background and assumptions. This chapter will also introduce the efficiency concept.

Chapter C is designed to propose certain theories that can be conceptually used by the economic analysis of law in order to approach the subject matter corporate taxation. Starting with the concept and the justification of corporate taxation, the manifold impacts will be subjected to a closer investigation.

From that contemplation, the analysis moves in Chapter D to a summary of the most often expressed reservations with regard to the economic and law concept, before Chapter E concludes the study.

## III. The Target of the Investigation

As mentioned in the previous section, economic analysis can be applied to several areas of law. This paper seeks to facilitate the understanding of the whereabouts and particularities in applying economic analysis to the field of (corporate) tax law.

In this respect, it may be helpful to recall the configuration of market prices, their functions and their objective features. Having in mind a decision neutral tax system on the individualistic level and an aggregated allocation efficient tax system on the aggregated level, the focal question examines, how taxes will influence relative prices on efficient markets.<sup>5</sup>

The starting point will be a microeconomic analysis of decisions. The impact of individual incentives on aggregated efficiency will also be closely scrutinized.

<sup>4</sup> Cf. *Bindseil/Richter*, Institutionenökonomik, in: Berthold (ed.), Allgemeine Wirtschaftstheorie, 318 (323 et seq.).

<sup>5</sup> Cf. *Elschen*, Steuer und Wirtschaft 1991, 99 (109).

By approaching law from an economic point of view, powerful tools can be applied. However, by doing so, some simplifications will need to be made. Nevertheless, the investigation will be accurate enough to mirror the actual incentives. The interactions of the parties, which are involved in the corporate sector, should be substantially motivated by economic concerns.

On the way to answer this question, the following sub-questions will be explored:

- What are the basic characteristics of the instrument “economic analysis of law”?
- Is this instrument appropriate to examine and to achieve the goals of Tax Law?

German Tax Law as a broad field covers all rights and responsibilities which tax provisions in tax affairs regularize.<sup>6</sup> This study focuses on the income taxes of the corporate sector, as well as the impacts on shareholders and creditors and their incentive structure. Thus, viewed from this angle the analysis circles around genuine capital market problems.

## B. Conceptual Basics – The Characteristics of the Economic Analysis of Law

The chapter will examine the basics of the economic analysis of law. It provides details in respect of its objectives, interconnections, background, assumptions and reviews the efficiency concept.

### I. The Objectives of the Economic Analysis of Law

This section overviews the objectives of the law and economics approach. Each paragraph begins with an objective and is followed by an explanation.

*The economic analysis of law tries to predict the consequences of legal rules.*<sup>7</sup> The law and economic approach is an attempt to explain and develop the law according to economic principles. The starting point is the contemplation of individuals or, more precisely, the individual behavior. From that behavior the economic analysis of law consider only a piece: the individual utility maximization.<sup>8</sup> A valuable paradigm could be that individual behavior is affected by legal rules and that behavioral responses to the rules are connected to the economic efficiency concept.<sup>9</sup> Yet the efficiency consequences are not observed from an individual’s point of view, but rather from an aggregated standpoint.<sup>10</sup>

Since this objective is still shapeless, it needs to be substantiated. This is achieved by defining efficiency criteria.<sup>11</sup>

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<sup>6</sup> Cf. *Lang/Tipke*, Steuerrecht, 3.

<sup>7</sup> Cf. *Aaken*, Normative Grundlagen der ökonomischen Theorie des Rechts, in: Aaken/Schmidt-Lübbert (eds.), Beiträge zur Ökonomischen Analyse, 5 (6).

<sup>8</sup> Cf. *Thiede*, Ökonomische Analyse der Körperschaftsbesteuerung, 8.

<sup>9</sup> Cf. *Burou*, JuS 1993, 8 (8).

<sup>10</sup> Cf. *Schneider*, Beitrag zur ökonomischen Analyse des Rechts, 1982, in: Tipke (ed.), Grenzen der Rechtsfortbildung, 85 (92).

<sup>11</sup> Cf. Section B.V.



*The economic analysis of law tries to define incentives and disincentives through legal rules that will result in long-term increased utility of all members.* Law can be defined as a man-made, enforceable arrangement to regulate human behavior. Rules matter, because under certain rules the individual rationality will produce desirable outcomes for the group, whereas under other rules it does not. Thus it can be concluded that rules are central to navigate human behavior. The law should define incentives and respective disincentives. Economics will contribute suggestions on how these incentives could be constructed.<sup>12</sup>

*The economic analysis of law tries to ease market exchanges by lowering transaction costs and therefore help the market to achieve the optimal allocation.*<sup>13</sup>

Economics is generally defined as the science of rational choice in a world of scarce resources.<sup>14</sup> Hence, it is an approach to understanding human behavior. The economic analysis of law utilizes two basic concepts of economics: rationality and efficiency.<sup>15</sup> The starting point for economic consideration is the market economy. It is characterized by the fact that the economic system is coordinated by market forces. Those market forces are the interactions between demand and supply. Since buyers and sellers behave rationally according to their economic utility, the market will be organized.<sup>16</sup> The individual focus will satisfy needs at a high level. Because the market forces produce an optimal allocation, the individual focus on the market, also produces a high level of society wealth.<sup>17</sup>

*The economic analysis of law is an instrument to fill open interpretation-possibilities in legal rules.*<sup>18</sup>

Legal rules are universally valid, even though they might contradict to efficiency. Connections yield there, where the law resorts to open interpretation-possibilities. Here exists a possibility for normative statements of the economic analysis of law.

*The economic analysis of law focuses on the disclosure of the interconnections between the science of law and the science of economics.*<sup>19</sup>

Many articles on the subject of taxation are written from an intra-disciplinary view. But there is a common base of the sciences (Figure B-1): On a micro-level the investigation focuses on single entities and they are striving to minimize waste of resources. Unless there are market failures, it is necessary that the decisions on the micro-level be not affected by tax rules in order to achieve the macroeconomic goal of allocation efficiency. And since scholars of the Chicago School teach that allocation-efficiency corresponds with equitable law, the common ground of the sciences is that

<sup>12</sup> Cf. *Kirchner*, Interdisziplinäre Zusammenarbeit von Ökonomie und Rechtswissenschaft, in: Assmann/Kirchner/Schanze (eds.), *Ökonomische Analyse des Rechts*, 62 (64 et seq.).

<sup>13</sup> For this paragraph confer Horn, *Rechtswissenschaft und Rechtsphilosophie*, 83 et seq.

<sup>14</sup> Cf. *Parisi*, *Methodology of Law and Economics*, in: Posner, *Economic Structure of the Law*, ix (xii).

<sup>15</sup> As shown in the sections B.IV. and B.V., those concepts are subject to different definitions.

<sup>16</sup> This process was called the „invisible hand“ by Adam Smith. Regulation would be a different possibility to organize the market. However, regulations will result in inefficiencies. Cf. *Blackmon*, *Incentive Regulation*, 1.

<sup>17</sup> However, an unrestricted individual will conflict with other members of the society. Thus, Article 2 of the German federal constitution restricts the right of personal freedom.

<sup>18</sup> Cf. *Ott/Schäfer*, *JZ* 1988, 213 (214).

<sup>19</sup> Cf. *Elschen*, *Steuer und Wirtschaft* 1991, 99 (99 et seq.).

the microeconomic decision neutrality corresponds with macroeconomic efficiency, which in turn corresponds with juridical justice.

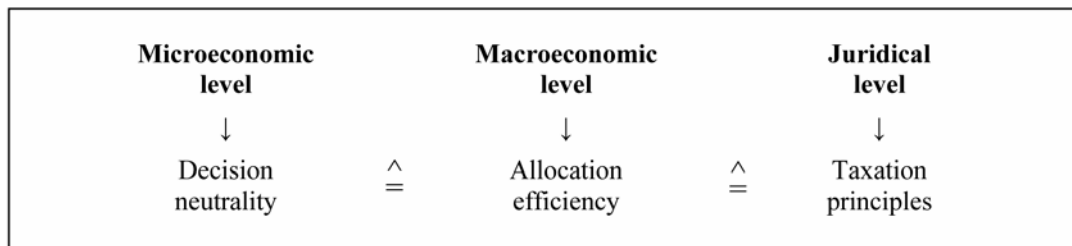


Figure B-1: The Relationship between Decision Neutrality, Allocation Efficiency and Taxation Principles. Own illustration.

## II. The Connection Between Law and Economics

Problems pertaining to law can be analyzed from different perspectives. Examples include sociological, philosophical or psychological views of the law. Hence, it seems possible to analyze the law from an economic point of view as well.<sup>20</sup>

In Tax Law, the word Economics reminds us of the long-lasting discussion about the substance-over-form contemplation.<sup>21</sup> This discussion centralized on the question of, whether the Tax Law has to follow Civil Law rules or exists as an autonomic area.<sup>22</sup>

The perceived relation of law and economics is similar to the aforementioned discussion. Originally, the science of tax law was considered a predecessor to economics, especially public finance.<sup>23</sup> The jurisprudence also kept autonomic, primarily because the positive law was always to be applied, even if its goals were contrary to the predictions of economic rational behavior.<sup>24</sup>

In today's understanding, overlaps arise where the positive law refers to open evaluations or where the law defines the evaluations and an analysis of the consequences becomes necessary.<sup>25</sup>

<sup>20</sup> Cf. *Kirchner*, Interdisziplinäre Zusammenarbeit von Ökonomie und Rechtswissenschaft, in: Assmann/Kirchner/Schanze (eds.), *Ökonomische Analyse des Rechts*, 62 (66 et seq.).

<sup>21</sup> In the literature the terms substance-over-form and economic analysis of law are sometimes used incorrectly identical. It needs to be noted that the substance-over-form is an interpretation method to capture reality for tax purposes, while the economic analysis of law predicts human behavior and its impacts on efficiency. Cf. *Schneider*, *Beitrag zur ökonomischen Analyse des Rechts*, 1982, in: Tipke (ed.), *Grenzen der Rechtsfortbildung*, 85 (92).

<sup>22</sup> Cf. *Ismer*, *Wirtschaftstheorie statt wirtschaftlicher Betrachtungsweise – Zur Rolle der Ökonomik im Steuerrecht*, in: Aaken/Schmidt-Lübber (eds.), *German Working Papers in Law and Economics*, 210. The substance-over-form contemplation is a component of the teleological interpretation. It was introduced by Enno Becker, who is the "architect" of the General Tax Act of 1918/19. In the reform of the general tax act in 1977, this fundamental principle was moved out. But the principle was still effective, because it was perceived as an obvious interpretation of the rules that does not have to be codified. It is used when the law defines legal situations but means economic results. Therefore, the rule is supposed to ensure that the economic substance of legal arrangements will be taxed.

<sup>23</sup> *Ibid.*, 210.

<sup>24</sup> Cf. *Ott./Schäfer*, *JZ* 1988, 213 (214).

<sup>25</sup> *Ibid.*, 214.

For cases where the law is even more unclear by not labeling situations, legal methodology suggests four methods to fill gaps (or loopholes) in the law (conclusion by analogy, reversal, teleological extension, teleological reduction). The analogy approach applies defined rules to unregulated legal situations. The prevailing opinion in technical literature<sup>26</sup> is inclined to only allow favorable analogy arguing that otherwise constitutional principles would be violated (e.g. the “certainty of (fiscal) law – doctrine”). If considering the assignment of the law as to ensure efficient allocation of scarce resources the question may be raised as to whether it would not be advantageous to fill the gaps (or loopholes) according to any (even an unfavorable) analogy. Some scholars have argued in this direction, for instance *Dieter Schneider*, who favors an efficiency increasing economic view.<sup>27</sup>

Figure B-2 displays interdisciplinary intercourses between jurists and economists. The outputs of the jurisprudence are laws, which are usually taken as exogenously given for economists. In the law and economics approach, economists now apply economic theory to examine the formation, structure, and impact of the law. Thus, the law becomes an input for the economists. The rules will then be analyzed according to their long-term incentives for the people, who are subject to law.

This result (output) will then become input for the jurist, who can use the information to improve the law.

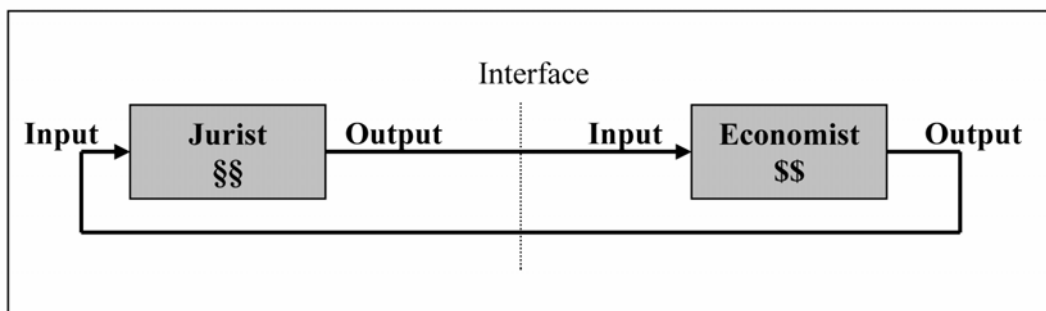


Figure B-2: Dialog Between Jurists and Economists. Own illustration, following Schmidchen, *Kommentar*, in: Ott /Schäfer (Hrsg.), *Ökonomische Analyse des Unternehmensrechts*, 146 (146 ff.).

It is clear that both the Jurisprudence and Economics observe humans and their actions.<sup>28</sup> As can be concluded at this point, this interdisciplinary approach will determine the future. *Erich Schanze* even predicts a hermeneutics of the studies of business, economics, and law.<sup>29</sup> The first sign that validates this statement is the development of interdisciplinary courses of studies.

<sup>26</sup> The BFH mainly disapproved an unfavorable analogy. Cf. *Tipke*, *Steuerrechtsordnung* 1, 180. BFH October 21, 1969 II 210/65, BStBl 1969 II, 736 (736).

<sup>27</sup> Cf. *Schneider*, *Beitrag zur ökonomischen Analyse des Rechts*, in: *Tipke* (ed.), *Grenzen der Rechtsfortbildung*, 85 (85 et seq., 94) and Cf. *Schneider*, *Unternehmensbesteuerung*, 106 et seq. The BFH allowed in very few cases an unfavorable analogy, see for instance BFH October 20, 1983 IV R 175/79, BStBl 1984 II, 221 (224).

<sup>28</sup> Economists look for the long-term results, while the jurists focus on the individual cases.

<sup>29</sup> Cf. *Schanze*, *Rechtswissenschaft und Betriebswirtschaftslehre*, 3772.

### III. The History of the Concept of Economic Analysis of Law

#### 1. *The Pioneers*

The science of Economics goes back to *Adam Smith*, who is considered the founder of Economic science. In his famous book “An Inquiry into the Nature and Causes of the Wealth of Nations” he described the incentive effect of law as follows:

“For if the legislature should appoint pecuniary rewards for the inventors of new machines, etc., they would hardly ever be so precisely proportioned to the merit of the invention as this is. For here, if the invention be good and such as is profitable to mankind, he will probably make a fortune by it; but if it be of no value he also will reap no benefit.”<sup>30</sup>

His contemporary colleague, *David Hume* saw law in a world of scarcity and limited foresight as a set of principles, which humans have learned to obey in order to make cooperation possible. *Jeremy Bentham*, investigated disincentives in a variety of legal questions.<sup>31</sup>

Well before *Smith*, *Hume* and *Bentham*, early pioneers like *Machiavelli* or the German Cameralists wrote about rational calculations of the cost and benefits of particular policies or rules.<sup>32</sup>

Summarizing the writings of the pioneers, they attempted to show how a better understanding of law could be achieved by using economic concepts. But all their work did not lead to a systematic understanding of law.

#### 2. *The First Wave*

Such an understanding was attempted in the nineteenth century. This early attempt to understand law and economics originated from the “German Historical School”, which was also supported in many other countries.<sup>33</sup> The core thesis of the movement was that property rights were assigned upon economic and social conditions.<sup>34</sup>

But this first wave was not stable. Two factors caused the decline of the movement. One was the increased specialization that caused economists to limit their investigation and to assume the legal institutions as given. The other factor was that the underlying economic methodology was fuzzy and therefore failed to convince lawyers.<sup>35</sup>

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<sup>30</sup> *Smith*, Lectures on Jurisprudence, reprint 1990.

<sup>31</sup> Cf. *Mackaay*, History of Law and Economics, 68.

<sup>32</sup> Cf. *Pearson*, Origins of Law and Economics, 10 et seq., 19.

<sup>33</sup> Important representatives were for instance John R. Commons, Carl Menger or Gustav Schmoller, who also taught at the university of Halle/Wittenberg.

<sup>34</sup> Cf. *Mackaay*, History of Law and Economics, 69.

<sup>35</sup> Cf. *Pearson*, Origins of Law and Economics, 130 et seq. The marginal theory was independently formulated first by William Stanley Jevons, Marie Esprit Léon Walras and Carl Menger by the end of the nineteenth century.

### 3. *The Second Wave*

First signs of the second wave occurred in 1937 as the young researcher *Coase* published his famous study “The nature of the firm”, which showed the connection between law and economics under a different aspect.<sup>36</sup> But the real reincarnation took place in the 1940s at the University of Chicago under *Aaron Director*. *Director*, an economist working with the Chicago Law School, applied economic theory to legal cases, in particular in the field of Antitrust Law.<sup>37</sup>

Starting from the 1950s *Gary Becker* noted that the economic approach is applicable to all human behavior. In 1957, the public choice school emerged from *Down’s* economic theory of democracy.<sup>38</sup>

In the 1960s three important articles were published:<sup>39</sup>

First, *Coase* showed that government interventions are not always efficient. If property rights are freely transferable and if there are no transaction costs, the market forces will allocate the best resources, independent of the original assignment.<sup>40</sup> Even if the transaction costs are never zero, *Coase’s* theorem will approximate reality when the transaction costs are less than the benefits received by the parties.<sup>41</sup>

Second, *Alchian* investigated the differences between private and public ownership.

Third, *Calabresi* conducted a rational interpretation of the Law of Torts.

Like *Calabresi*, only a few of the early writers were lawyers. As shown in the early attempts of law and economics, the participation of lawyers was very essential.

This changed in the 1970s when the final breakthrough accomplished by *Posner’s* book “Economic Analysis of Law”, which was written by a lawyer for lawyers. *Posner* introduced the fundamental principles of price theory across the spectrum of legal fields.<sup>42</sup>

In the 1980s several symposia were held about the economic analysis of law. In this decade many scholars questioned the paradigm, while *Posner* and other proponents persistently defended law and economics against the attacks.<sup>43</sup>

In the 1990s new Journals emerged, which did not take the Chicago research agenda for granted anymore. The new development expanded the economic analysis of law to all kind of institutional forms.<sup>44</sup>

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<sup>36</sup> Coases idea of a firm is, that it is an institutional device to minimize transaction cost. Cf. *Coase*, *The Firm, the Market, and the Law*, 38 et seq.

<sup>37</sup> Cf. *Duxbury*, *American Jurisprudence*, 341.

<sup>38</sup> Cf. *Mackaay*, *History of Law and Economics*, 73.

<sup>39</sup> *Ibid.*, 74. Posner divides the second wave in the „new“ and „old law and economics“. The mentioned articles represent the beginning of the new law economics period. *Posner*, *Economic Analysis of Law*, 21.

<sup>40</sup> Cf. *Schanze*, *Ökonomische Analyse des Rechts in den USA*, in: Assmann/Kirchner/Schanze (eds.), *Ökonomische Analyse des Rechts*, 1 (3).

<sup>41</sup> Cf. *Posner*, *Economic Analysis of Law*, 51.

<sup>42</sup> Cf. *Mackaay*, *History of Law and Economics*, 76.

<sup>43</sup> As an example confer *Polinsky*, *Economic Analysis as a Potentially Defective Product*, translated in: Assmann/Kirchner/Schanze (eds.), *Ökonomische Analyse des Rechts*, 99 (99 et seq.).

<sup>44</sup> Examples are: the role of institutions, historical studies, strategic behavior, limited rationality and uncertainty. Cf. *Mackaay*, *History of Law and Economics*, 72.

## IV. The Economic Human Behavior Model

### 1. *First Thoughts*

In this section the basic assumptions about human behavior will be explained. These assumptions suggest that individuals will respond to changes in laws in a way that can be measured and predicted.

This basic economic model understands human behavior as a rational decision between alternatives according to the individual preferences in a world of scarce resources. The most prominent description of this is the homo economicus model.<sup>45</sup>

### 2. *Assumptions of the Model*

#### a) *Scarcity of Resources*

The homo economicus is characterized by his unlimited needs. At the same time he faces the problem of limited resources available to satisfy all his (endless) wants. Therefore, he can never fulfill every need. Hence, he has to decide which desire he is going to fulfill and with which resources.<sup>46</sup>

It is important to be aware that scarcity is not to be understood in an absolute manner, but rather in a relative one, because the scarcity is dependent on the extent of the needs as well as on quantity of the resources available.<sup>47</sup> In other words, scarcity does not exist for resources that are available in quantities higher than needed to fulfill one's needs.<sup>48</sup>

In this understanding, the law has a direct impact on scarcity. By influencing the needs or the quantities of available resources it will increase or decrease the scarcity problem.<sup>49</sup> For instance, in 2001, as the legislator worsened the debt-equity-ratio in sec. 8a *Körperschaftsteuergesetz* (Corporate Tax Act; hereinafter: KStG) from 3:1 to 1½: 1, it reduced financial resources for the affected corporations because more taxes had to be paid due to less deduction of interest.

#### b) *Self Interest*

How does the homo economicus behave in a decision situation? The first answer is that he will pursue his own interests. It is assumed that humans behave in a way that focuses on their own individual goals. This does not exclude egoism or Altruism. Even if Altruism is seldom, it is empirically observed. This phenomenon can be explained by the fact that altruistic behavior can increase the individual's own utility as well. However, the theory aims to explain the general behavior. Thus, the homo

<sup>45</sup> Cf. *Kirchgässner*, Homo Oeconomicus, 65.

<sup>46</sup> Cf. *Behrens*, Die ökonomischen Grundlagen des Rechts, 31.

<sup>47</sup> For instance, grocery stores usually do not have a need for gold reserves, therefore the gold reserves are not a scarce resource for the grocery stores. Cf. *Behrens*, Die ökonomischen Grundlagen des Rechts, 31.

<sup>48</sup> An example is the air. Apart from polluted areas more air is available than one can breathe.

<sup>49</sup> Cf. *Behrens*, Die ökonomischen Grundlagen des Rechts, 31 et seq.

economicus is assumed as an individual who is indifferent to external interests as long as they do not influence his own sphere.<sup>50</sup>

*c) Rational Behavior*

The second answer to the aforementioned question is that the homo economicus will behave rationally in his decision-making. Out of the scarcity of resources follows the postulate of not wasting them.<sup>51</sup> To behave rationally means that the decision maker will minimize the input on a given output, or maximize the output on a given input. Therefore, utility maximization means to use resources according their highest utility. In this view the traditional cost term (valuated quantities) changes to the so-called opportunity cost. The opportunity costs are the benefits of the best alternative forgone. Costs are therefore the not implemented possibilities of resource usage.

By considering the task of the law to guide individual decisions between alternatives, it can be seen that the law will achieve this only if it touches the individual utility consideration or, in other words, the individual preference relation. This will change the behavioral alternatives and therefore alter the opportunity cost as well.

*d) Methodological Individualism*

So far the investigation has only considered the single individual. But the goal of the economic theory is not to explain the behavior of one single human being, rather to identify the common behavior of relevant groups. This step will be achieved through methodological individualism. Consequently, the reaction of the group is the typical reactions of the individuals. The group itself does not have its own interests, which are not present at the individual level. Hence, methodological individualism offers the possibility to analyze collective reactions to changes in the legal system.

*e) Normative Individualism*

While methodological individualism is a positive approach, normative individualism focuses – as the name indicates – on the normative site.

It means that legal rules will only be accepted as legitimate when they are founded on the common consensus.

### *3. Three Fundamental Concepts of Economics*

*Posner* summarizes three concepts of economics, which are essential for an economic analysis of law.<sup>52</sup>

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<sup>50</sup> For this paragraph confer *Wieckhorst*, *Recht und Ökonomie*, 34 and *Schmidtchen*, *Homo oeconomicus und das Recht*, in: Aaken/Schmidt-Lübbert (eds.), *German Working Papers in Law and Economics*, 1 (2 et seq.).

<sup>51</sup> Cf. for this section *Behrens*, *Die ökonomischen Grundlagen des Rechts*, 33 et seq.

<sup>52</sup> Cf. for this section *Posner*, *Economic Analysis of Law*, 3 et seq.

The first fundamental principle is called “Law of Demand”. It shows the inverse relation between price charged and quantity demanded. If the price of a good or service (A) *ceteris paribus* rises (say from  $p_1$  to  $p_2$  in figure B-3), it will become relatively more expensive. The consumers will react by substituting the product or service (A), because the other goods and services are now relatively cheaper than before. As a result, the quantity demanded of A will reduce from  $q_1$  to  $q_2$ .<sup>53</sup>

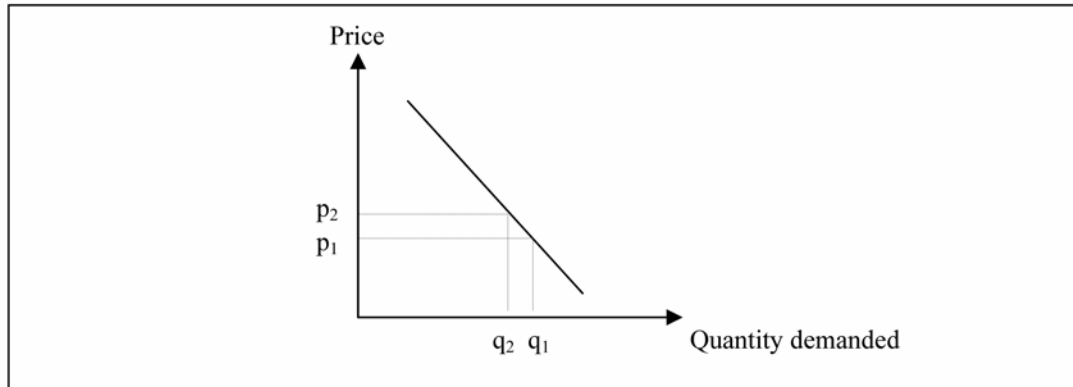


Figure B-3: The Inverse Relation Between Price Charged and Quantity Demanded. Own illustration.

The second fundamental principle concerns the nature of costs: First, an economist understands by cost the “opportunity costs” and second, decisions on prices and quantities are not affected by sunk costs. Therefore, the individuals will equate opportunity cost to out-of-pocket costs and they will ignore sunk costs.

The third fundamental principle states that resources tend to gravitate towards their most valuable uses. Combined with the second fundamental principle it will yield the Coase theorem<sup>54</sup> (The initial assignment of rights will not affect the ultimate allocation of resources as long as there are no transaction costs.).

#### 4. Comparison to the Sociological Human Behavior Model

The science of law often uses a different model of human behavior: the homo sociological model. This segment will answer the questions as to what are the main differences to our assumed homo economicus, and why the economic human behavior model is a better fit for the economic analysis of law approach.

The model of the homo sociologicus may be characterized by three points:

1. Individual human behavior is influenced by the behavior of the society.
2. Individuals behave according to their role.
3. Deviation from the expected role behavior will be sanctioned by the society.<sup>55</sup>

<sup>53</sup> Posner also mentions, that the law and demand model does not only work with explicit prices. This results from the fact that economists measure wealth by what people would pay and not what they do pay. Therefore, even leisure is a part of wealth, even though it is not bought or sold.

<sup>54</sup> Cf. Coase, The problem of social cost, in: Assmann/Kirchner/Schanze (eds.), *Ökonomische Analyse des Rechts*, 129 (129 et seq.).

<sup>55</sup> Cf. Frey/Heggli, *Außermarktliche Ökonomie*, in: Gabler *Wirtschaftslexikon* 1997, 362 (366).



Therefore, the motives for homo sociologicus behavior are not the satisfaction of unlimited needs, rather the conformity to norms.<sup>56</sup> The homo sociologicus cannot choose between options. Therefore, he is not assumed to have any power. Restrictions to his behavior are built by role expectations and sanctions of the society, but not by income, prices, or institutional behavior.<sup>57</sup>

The economic analysis of law explores the incentive impact of law on the (aggregated) individuals. If human beings, like the homo sociologicus, were not able to control their behavior, it would not make sense to combine behavior with legal consequences. Hence, where humans are assumed to have no free choice, they do not need legal rules to regulate behavior.

## V. The Economic Efficiency

### 1. *The Nature of the Efficiency Concept and Built-in Problems*

In considering the economic behavioral model, a society should allocate scarce resources in a way that the greatest utility possible will result.<sup>58</sup> A society is efficient when it maximizes the needs of all its members.<sup>59</sup> Thus, it can be assumed that the minimization of waste is an agreeable goal.<sup>60</sup> This intent is validated in the efficiency criteria that will be explored in the following sections. The law and economics approach aims to look at the impact and derives hints on how legal rules should be configured regarding an efficient legal system.<sup>61</sup> Hence, it is a measure to evaluate the impact of decisions.<sup>62</sup>

By implementing the efficiency concept, there are three difficulties to be aware of: First, the problem of “external effects”<sup>63</sup>, second, the problem of “public goods” and third, market power. All three difficulties cope with the fact that some resources are used extensively, while others are barely used.<sup>64</sup> If an individual faces, for instance, negative external effects, the producing decision maker will perceive the production cost as too low. Hence, it follows that this individual will produce too many goods or he will consume too many resources. On the decision for or against public goods individuals will (due to a missing rivalry in consumption and the invalidity of the exclusion-principle) not indicate their true preferences. Individual rationality will result in

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<sup>56</sup> Cf. *Heap* et al., *The Theory of Choice*, 63.

<sup>57</sup> The addition of additional restrictions is hardly criticized since the model becomes tautological but not closer to reality. Brandstätter and Güth name that „neoclassical repairshop“. Cf. *Brandstätter/Güth*, Introduction to Essays on Economic Psychology, in: Brandstätter/Güth (eds.), *Essays on Economic Psychology*, 10.

<sup>58</sup> Cf. *Ott/Schäfer*, *Lehrbuch der ökonomischen Analyse*, 5.

<sup>59</sup> Cf. *Burou*, *JuS* 1993, 8 (11).

<sup>60</sup> Cf. *Ott/Schäfer*, *JZ* 1988, 213 (218).

<sup>61</sup> Cf. *Wieckhorst*, *Recht und Ökonomie*, 35.

<sup>62</sup> Cf. *Behrens*, *Die ökonomischen Grundlagen des Rechts*, 85.

<sup>63</sup> It is defined by Stiglitz as a situation in which an individual or firm takes an action but does not bear all the costs (negative externality) or receive all the benefits (positive externality). Cf. *Stiglitz*, *Economics of the Public Sector*, 80.

<sup>64</sup> Cf. for this paragraph *Behrens*, *Die ökonomischen Grundlagen des Rechts*, 86 et seq.

collective irrationality, which again is inefficient. Market power will also distort production, because the monopolist can influence the market price.

Thus, all three problems are due to the wrong incentive structure, which prevents the allocation optima.<sup>65</sup> Therefore, legal rules should

- Internalize externalities as much as possible
- Work against the extensive or infrequent use of public goods<sup>66</sup> and
- Regulate market power<sup>67</sup>.

Now, the efficiency-criteria, which define the optimal state of society will be introduced.

## 2. Two Widely Used Criteria

### a) Pareto-Criterion

The Italian *Vilfredo Pareto* defined 1897 an optimal social state as a state (e.g. A) that does not disadvantage any member of society in comparison to an alternative social state (e.g. B) and at least one member will prefer the state A.<sup>68</sup> Therefore, a Pareto-improvement is a change that benefits someone and hurts nobody.<sup>69</sup> The advantage of the Pareto-principle is its avoidance of interpersonal utility comparison; the disadvantage is that it gives each member a veto right.<sup>70</sup> For the economic analysis of law the principle is not useful, since it is ascribed to the first distribution that is often not changeable without harming anyone.

### b) Kaldor-Hicks Criterion

This disadvantage was the subject of many discussions in the late 1930s. The goal back then was to define a more broadly applicable measure than the Pareto-principle. The “Kaldor-Hicks-principle” was developed in 1939 by the English Nobel Price winners, *Kaldor* and *Hicks*.<sup>71</sup> According to this principle, an efficiency improvement is a change that would be a Pareto improvement if combined with potential transfers among those affected. In other words, a decision that favors one member and disfavors another is still an efficiency improvement, if the losses of the losers can be compensated by the gains of the winners.<sup>72</sup> However, a real transaction is not required.<sup>73</sup>

<sup>65</sup> *Ibid.*, 87 et seq.

<sup>66</sup> Behrens describes a river, which results in a clean condition to a social benefit, while in dirty conditions it will be a social disadvantage. *Behrens*, Die ökonomischen Grundlagen des Rechts, 90.

<sup>67</sup> Blackmon indicates that regulation of monopolies reduces deadweight loss, but regulation also generates incentives for regulated firms to behave inefficiently. *Blackmon*, Incentive Regulation, 22.

<sup>68</sup> Cf. *Ott/Schäfer*, Lehrbuch der ökonomischen Analyse, 23.

<sup>69</sup> Cf. *Friedman*, Law's Order, 24.

<sup>70</sup> Cf. *Eidenmüller*, Effizienz als Rechtsprinzip. Möglichkeiten und Grenzen der ökonomischen Analyse des Rechts, 49.

<sup>71</sup> Cf. *Zerbe*, Economic Efficiency in Law and Economics, 4.

<sup>72</sup> Cf. *Burrow*, JuS 1993, 8 (9).

<sup>73</sup> Cf. *Eidenmüller*, Effizienz als Rechtsprinzip. Möglichkeiten und Grenzen der ökonomischen Analyse des Rechts, 51.

Nevertheless, this principle is the most sound, because often a utility improvement for one party is connected with a utility withdrawal for another party.<sup>74</sup> Since this rule will allow losers, the question might be asked, if those principles are still agreeable. *Ott/Schäfer* affirm this, because the rule will randomly favor and disfavor individuals so that in the long run, a general compensation will make every one better off. Figure B-4 shows us that each of the decisions 1-3 may be disadvantageous for one individual (because a compensation is not necessary). But looking at the bundle of the three decisions, every one will be better off and agree to that principle.

	Individual			Normative Criterion
	A	B	C	
Decision 1	1	1	-1	Kaldor-Hicks
Decision 2	1	-1	1	Kaldor-Hicks
Decision 3	-1	1	1	Kaldor-Hicks
<b>Decisions 1-3</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>Pareto</b>

Figure B-4: *The Agreement of the Kaldor-Hicks Criterion in the Long Run.* Own illustration, following *Ott/Schäfer, Die ökonomische Analyse des Rechts, JZ 1988, 213 (218).*

### 3. Further Developments of Efficiency Criteria

#### a) Scitovsky Double Test

*Scitovsky* argued that the use of the Kaldor-Hicks principle is not sufficient. He found that it is sometimes possible to expand utility by reversing an efficiency improvement.<sup>75</sup> Thus, according to the *Scitovsky* criterion an efficient improvement takes place only if the Kaldor-Hicks-Principle is fulfilled and reversibility is not advantageous.

#### b) Samuelson Criterion

*Paul Anthony Samuelson* developed *Scitovsky's* principle in a more generalized form.<sup>76</sup> *Samuelson* considered not only the distributions of utility before and after the rule or decision, but also the possible distribution of utility. According to this principle, a change is only efficient, if all possible after-change utility distributions are superior to all possible before-change utility distributions.<sup>77</sup>

<sup>74</sup> Cf. *Wieckhorst, Recht und Ökonomie*, 37.

<sup>75</sup> Cf. *Zerbe, Economic Efficiency in Law and Economics*, 60.

<sup>76</sup> *Ibid.*, 60.

<sup>77</sup> Graphically speaking, the new and old utility-possibility curves are not supposed to cross.

c) *Little Criterion*

The Little criterion defines a decision as efficient if the Kaldor-Hicks and the Scitovsky principles are fulfilled and the distribution is requested by the individuals. This means that any distribution must be approved first by the members of the society.

d) *Posner's Three Principles*

*Posner* talks of the wealth maximizing principle, which says that state X is superior to state Y if the wealth in X is higher than in Y. Thus, his goal is to maximize the overall change in wealth. This criterion corresponds largely with the Kaldor-Hicks principle that *Posner* acknowledges.<sup>78</sup>

He further develops a decision rule, which allocates resources to the buyer who is willing to pay the highest price.

The third criterion is called cost-benefit calculation. It states that a rule should be allowed if, and only if, its overall benefit is higher than the overall cost.

In the following investigation the word efficiency shall be used in the context of the Kaldor-Hicks-criterion. The Pareto-criterion is not useful and the other developments are not practical either; even though they cause an increase in accuracy they will also increase disproportionately in complexity.

#### 4. *Efficiency with Respect to Other Theories of Justice*

The question, if the economic analysis of law (with its focus on efficiency) is a theory of justice, is a controversial one. *Ott/Schäfer* argue that since the economic and law approach declares a rule or decision to be socially better or worse than another rule or decision, that it is then a theory of justice.<sup>79</sup> In their view, an inefficient society is unfair.<sup>80</sup> *Fezer* refutes the precedent of the efficiency principle before other theories of justice.<sup>81</sup> Efficiency is only one equality-principle next to distribution.

The economic analysis of law approach, by itself, cannot justify or invalidate other theories of justice (e.g. the equitable distribution approach). It also cannot develop criteria to solve the conflict between those theories, but it can predict which efficiency losses will occur if other theories of justice will be pursued.<sup>82</sup>

<sup>78</sup> Confer for this section *Posner*, *Economic Analysis of Law*, 12 et seq.

<sup>79</sup> Cf. *Ott/Schäfer*, JZ 1988, 213 (215).

<sup>80</sup> Cf. *Ott/Schäfer*, *Lehrbuch der ökonomischen Analyse*, 5 et seq. Since not every efficient solution is desirable they admit that it can be necessary to take efficiency losses into account to preserve higher values. Cf. *Ott/Schäfer*, JZ 1988, 213 (215). Such a case occurs, if inalienable human rights (Article 1 Para 2 German federal constitution) are involved. *Behrens* asks the question of whether or not a free individual should be allowed to sell himself into slavery. Cf. *Behrens*, *Die ökonomischen Grundlagen des Rechts*, 196.

<sup>81</sup> Cf. *Fezer*, JZ 1988, 223 (223 et seq.).

<sup>82</sup> Cf. *Ott/Schäfer*, JZ 1988, 213 (219). *Nobert Horn* reasons that those conflicts often disappear if the time frame gets changed. Cf. *Horn*, *Rechtswissenschaft und Rechtsphilosophie*, 79.

*Calabresi* and *Melamed* argue that equality-problems can be translated into efficiency or distribution problems.<sup>83</sup> *Aristotle* already offered a suggestion on how equality goals could be concretized in “*iustitia commutative*” and “*iustitia distributive*”.<sup>84</sup> The concept of “*iustitia commutative*” concentrates on absolute equal treatment and therefore implies the use of efficiency criteria.<sup>85</sup> The “*iustitia distributive*” concept focuses on the comparatively equal treatment of different persons and therefore implies the equal-distribution approach.

As long as the goals of optimal allocation and optimal distribution correspond with the goals of equality, the equality consideration is not needed.<sup>86</sup> But *Calabresi* and *Melamed* emphasize that there are goods that do not fit under the principles of efficient or distributive optima. Those goods are the highest values of mankind, the dignity of man.<sup>87</sup>

The contradiction between equality and rules was described by *Dahrendorf*.<sup>88</sup> He argues that a balanced assignment of goods (= bundle of rights) is impossible. What is allowed to one individual, may burden another individual. Subsequently, he sees the origin of inequality in the existence of rules. Thus, the optimal distribution cannot aim to eliminate inequality, rather to find an inequality state, which every member of society is willing to accept.

### C. Extent of Implementation of the Economic Analysis of Law into the Corporate Tax Law

This chapter starts with an introduction to the concept of corporate taxation in Germany and the justifications of corporate taxation. General impacts of corporate taxation, specific impacts of the rules determining the corporate tax base, and the impact of taxation on the financial structure, will be examined. The chapter closes with an analysis of the impacts of corporate tax rules on share disposals in comparison with dividend distributions.

#### I. Concept of Corporate Taxation in Germany

This section is designed to introduce the different taxes encountered by corporations. Furthermore, the classic concept of taxation will be analyzed. A discussion on so-called guiding-norms in the tax law shall follow.

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<sup>83</sup> Cf. *Calabresi/Melamed*, Property Rules, Liabilities Rules, and Inalienability, 1089, quoted from *Behrens*, Die ökonomischen Grundlagen des Rechts, 82. Rawls also describes the close relation between equity and distribution. Cf. *Rawls*, Theorie der Gerechtigkeit, 19 et seq.

<sup>84</sup> Cf. *Aristoteles*, Nicomachean Ethics, 108 et seq. [1130a], 115 [1132a]. For further explanations see for instance *Kolb*, Geschichte der Volkswirtschaftslehre, 6 et seq.

<sup>85</sup> Cf. *Behrens*, Die ökonomischen Grundlagen des Rechts, 101 et seq.

<sup>86</sup> *Ibid.*, 103.

<sup>87</sup> Cf. *Calabresi/Melamed*, Property Rules, Liabilities Rules, and Inalienability, 1102 et seq., quoted from *Behrens*, Die ökonomischen Grundlagen des Rechts, 103.

<sup>88</sup> Cf. *Dahrendorf*, Ursprung der Ungleichheit, Recht und Staat in Geschichte und Gegenwart 232 (1966), 26 et seq.

## 1. *Taxes Attaching to the Corporate Form*

In Germany there is no direct taxation of businesses. Rather, the taxation depends on the legal form. The basic features of the legal forms are regulated in the Company Law like the Civil Law, Commercial Law, GmbH or Stock Act.

### a) *Taxes on Profits*

The highest tax incidence results from taxes on profits. Corporations are subject to corporate income tax, solidarity surcharge and trade tax. On distribution, they are required to withhold 20% of the dividend in the name of the shareholder. For domestic shareholders, the withholding tax<sup>89</sup> is a prepayment of the individual income tax.<sup>90</sup>

The corporate income tax is based on the net corporate income<sup>91</sup> and taxed at a rate of 25%<sup>92</sup>. The corporate tax is itself tax base for the solidarity levy amounting to 5,5%.<sup>93</sup>

The trade tax for corporations is based on the net corporate income<sup>94</sup> as well, but adjusted with add backs and deductions<sup>95</sup> to maintain the objective character of the trade tax. The resulting preliminary trade tax base is multiplied by a fixed trade tax multiplier of 5%<sup>96</sup> and afterwards multiplied by a municipal multiplier<sup>97</sup> that is defined by the local community.

### b) *Property Taxes*

Further, the corporation might be subject to the real estate tax and death and gift tax, depending if it holds property in Germany or inherits taxable objects.

### c) *Transaction Taxes*

Depending on the arrangement of the corporation various transaction costs may apply. For instance, domestic paid deliveries and services of entrepreneurs are subject to value added tax. If the corporation acquires property, real estate acquisition tax will be due.

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<sup>89</sup> Cf. 43 et seq. Einkommensteuergesetz (Income Tax Act; hereinafter: EStG).

<sup>90</sup> Unlimited tax liable shareholders get the withholding tax credited according to sec. 36 (2) No. 2 EStG, while for limited tax liable shareholders the withholding tax will be final, sec. 50 (5) EStG.

<sup>91</sup> Sec. 7 icw. sec. 8 KStG. Carried forward losses can be considered according sec. 10a GewStG.

<sup>92</sup> Sec. 23 (1) KStG.

<sup>93</sup> Sec. 3 Solidaritätszuschlaggesetz (Solidarity Surcharge Act, hereinafter: SolZG) defines the tax base, while sec. 4 SolZG defines the tax rate. In the following the solidarity levy will be neglected.

<sup>94</sup> Sect 6 icw. sec. 7 GewStG.

<sup>95</sup> Sec. 8 GewStG defines the add backs and sec. 9 GewStG the deductions.

<sup>96</sup> Sec. 11 (2) No. 2 GewStG.

<sup>97</sup> Sec. 16 GewStG.

## 2. *Separate Taxation of Legal Entities*

Two main approaches exist for the design of the corporate tax. The first approach is the Tax Credit System, which was applied in Germany up until the end of the year 2000. Since the Tax Credit System treats the corporate tax as prepayment of the individual tax, no double taxation results.

The second approach is a classical system of corporate taxation. Classical systems are characterized by a double taxation at the corporate and individual level, while granting shareholders relief against domestic double taxation. Germany applies a form of the classical system called the Half Income System. This system taxes the corporation at 25% and gives dividends to corporate shareholders at 0%.

Individual shareholders will only include 50% of the dividend into their personal tax base. The sale of participations in corporations is for corporate shareholders and for individual shareholders<sup>98</sup> in general tax exempted.<sup>99</sup>

## 3. *Social Policy Rules (Regulatory Norms)*

The tax law distinguishes between three categories of rules: revenue rules or fiscal-norms, social policy rules or regulatory-norms and simplifying rules or simplification-norms.

While the goal of fiscal norms is to raise revenues, social policy rules (regulatory-norms) are supposed to influence behavior, and simplification-norms are used for simplification purposes.

The term regulatory-norm is not legally defined in the tax act. It means that the tax law gets administrative assignments passed on as well.<sup>100</sup>

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<sup>98</sup> For individual shareholders the capital gain resulting from a sale of a corporation is taxable, if  
 the seller held at least 1%, sec. 3 No. 40 lit. c EStG  
 the shares were held for less than a year, sec. 3 No. 40 lit. j EStG  
 the shares were issued for the tax free contribution of a business or business segment and were sold  
 after 7 years, sec. 3 No. 40 sentence 4 EStG  
 the share were sold as an business asset without a previous writedown with tax affects on the book  
 value, sec. 3 No. 40 lit. a EStG  
 the seller does not use the newly added „rollover relief“ according sec. 6b (10) EStG.

<sup>99</sup> But the capital gain will be taxable for corporations, if  
 the shares were bough from natural persons and sold under going concern value within 7 years,  
 sec. 8b (4) sent.1 No. 2 KStG  
 “brought in”-shares (sec. 20 (1) sent. 1 Umwandlungssteuergesetz (Conversion Tax Act, hereinaf-  
 ter: UmwStG) were sold within 7 years, sec. 8b (4) sent. 2 No. 1 KStG  
 tax-effective, going concern value depreciation, sec. 8b (2) sent. 2 KStG  
 banking-trade, sec. 8b (12) KStG.

<sup>100</sup> Cf. *Weber-Grellet*, NJW 2001, 3657.

Since regulatory-norms influence the decision makers' freedom to choose, the constitutional boundaries become important. Thereafter, each tax matter of fact has two impacts: First, it will result in financial burdens and reliefs, which are subject to article 3 of the federal constitution. The second matter of fact summarizes all other impacts next to the monetary withdrawals, which are subject to the liberty laws of the federal constitution.<sup>101</sup>

Whether or not the tax law should contain regulatory-norms, is an often disputed issue. The Supreme Court and judge *Weber-Grellet* argue in favor of it.<sup>102</sup> In contrast, *Homburg* and *Elschen* justify the use of regulatory-norms only in case of market failures.<sup>103</sup>

From an efficiency standpoint the latter opinion is to be favored, since in the absence of market failures, the market will allocate resources in the most efficient way. In case of market failures regulatory-norms can improve aggregated efficiency by setting incentives to buy, sell, produce or use resources on the individual level.

## II. Justification of the Corporate Income Taxation

The corporate income tax may be understood in two ways: First, as a supplemental tax to the individual income tax and second, as a separate tax.

If understood in the first way, the corporate income tax is part of the larger scheme of income taxation.<sup>104</sup> Under this justification, the tax is a withholding tax, which will be necessary to prevent rich members of society from avoiding income tax by investing in corporations.<sup>105</sup> This understanding requires that the corporate tax is credited against the individuals' income tax. Under the prevailing Half Income System this is only partly achieved, therefore, this justification does not apply.

On the other hand, the corporate income tax may be seen as an independent tax. Early justification relied on various benefits that the corporation received in comparison to sole proprietors or partnerships. Those benefits include the awarding of the status as a legal person, the limited liability,<sup>106</sup> or the supply of public services (e.g. infrastructure).<sup>107</sup> Furthermore, arguments were made that corporations have better credit ratings, benefits in competition and higher returns due to accumulated capital.<sup>108</sup> But all these benefits do not apply for all corporations in the same way.<sup>109</sup> There-

<sup>101</sup> Ifg-intern, 1-2000, available on the Internet: <<http://www.ifg-muenster.de/Aktuelles/Newsletter/Newsletter%202-2002.pdf>> (visited on September 8, 2002).

<sup>102</sup> BVerfGE July 17, 1974, in: BVerfGE 38, 61 (79 et seq.) and *Weber-Grellet*, NJW 2001, 3657 (3658, 3664).

<sup>103</sup> Cf. *Homburg*, Steuerlehre, 197 and *Elschen*, Steuer und Wirtschaft 1991, 99 (115).

<sup>104</sup> Cf. *Crane*, Corporate Taxation, 4 and *Schneider*, Steuerlast und Steuerwirkung, 54 et seq.

<sup>105</sup> Cf. *Stiglitz*, Finanzwissenschaft, 535.

<sup>106</sup> A comprehensive investigation of the pros and cons can be found in *Easterbrook/Fishel*, Economic Structure of Corporate Law, 41 et seq.

<sup>107</sup> Cf. *Pezzer*, Rechtfertigung der Körperschaftssteuer, in: Lang (ed.), Steuerrechtsordnung in der Diskussion, 419 (425). *Tipke*, Die Steuerrechtsordnung 2, 727 et seq.

<sup>108</sup> Cf. *Wöhe*, Steuern des Unternehmens, 132 et seq.

<sup>109</sup> Furthermore, partnerships can achieve the same benefits, for instance limited liability can be accomplished by a limited partner of a KG. The infrastructure is accessible for everyone and large partnerships might have lower capital cost and a higher returns than corporations.



fore, those aspects are nothing more than speculations. The ability-to-pay principle requires a more sound justification.<sup>110</sup>

The ability-to-pay principle calls for a benchmark to measure the tax. Different options were developed,<sup>111</sup> but only the corporate profit should be used as an underlying characteristic for the ability-to-pay principle. The ability-to-pay principle is defined as the capacity to pay taxes out of accumulated income in accord with the amount of disposable income.<sup>112</sup> Corporations strive as legal and commercial independent entities for added value. This means that the ability to perform for corporations is the same as for natural persons. Hence, the corporate tax should be justified by the autonomous ability to pay.

The justification is also in sync with the federal constitution. Article 3 (1) creates the constitutional frame. The ability to pay principle forms the “*Tertium comparationis*” (point of reference) for the use of the equality principle in the tax law. A broader frame to justify the corporate tax from a constitutional point of view are also described by the articles 9 (1), 12 (1), 14 (4) and 2 (1) of the federal constitution.

### III. The Impact of Corporate Taxation in General

The sciences of business, economics, and law want to explore the impacts of taxation. This section covers the effects of the corporate income tax on liquidity, risk, profitability and the decision possibilities of the corporation. Since rationality assumed, opportunities to avoid taxation will be used. Therefore, the corporation might be able to shift the corporate tax to consumers and workers. Further, the tax avoidance results in substitutions, which will cause distortions.

#### 1. Effect on Liquidity, Risk, Profitability and Decisions

Taxes are paid with money;<sup>113</sup> therefore, they affect liquidity by changing cash flows.<sup>114</sup>

Also, taxes will change the willingness to take risks, because expenditures are usually weighted higher than revenues. With expenditures or losses people tend to be risk-seeking while the same amount received as revenue will result in a risk-averse behav-

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<sup>110</sup> Cf. *Tipke*, Die Steuerrechtsordnung 2, 737. Furthermore, 78 tax experts criticized this approach by the argument that an enterprise (corporation) is just the instrument through which entrepreneurs (natural persons) derive their income. Therefore, a corporation cannot be subject to tax. *Siegel et al.*, BB 2000, 1269 (1269 et seq.).

<sup>111</sup> For instance, the legislator argued in 1920 that superior earning capacity of corporations calls for protections of the other market participants.

<sup>112</sup> But *Tipke* prefers the understanding of the ability-to-pay principle in the meaning of an equal taxation according to capability. Cf. *Tipke*, Die Steuerrechtsordnung 1, 480.

<sup>113</sup> Sec. 3 (1) Abgabenordnung (General Tax Act, hereinafter: AO).

<sup>114</sup> Cf. *Schneider*, Steuerlast und Steuerwirkung, 24 et seq.

ior.<sup>115</sup> Therefore, the risk-preference depends on the rules that determine the tax base, especially the loss offset regulations.<sup>116</sup>

The corporate tax might also change profitability. The benefits of different investment and financing options will change. The ranking of projects might be altered due to corporate taxation.

Further, due to corporate taxation, the decision makers might change their goals or invent new options.

For instance, the old split rate<sup>117</sup> resulted in an incentive to distribute corporate earnings, while the new corporate tax rate<sup>118</sup> results in an incentive to retain earnings. A new option might be, for instance, the change of the legal form. New corporations might face higher corporate tax burdens, because they might not be able to obtain as much debt as other corporations. Therefore, entrepreneurial companies have to issue more stocks and pay more dividends, which are not deductible<sup>119</sup> as interest<sup>120</sup> would be.<sup>121</sup> But trade tax is also imposed on corporate profits. Since for trade tax purposes, 50% of interest but 100% of dividends will be taxed, another incentive to change the financial structure towards debt is resulting.<sup>122</sup>

But in a neutral tax system distortions may be caused. For instance, this could happen if corporations anticipate changes in future tax policies. In this case, there are incentives to revalue and adjust the existing investment programs.<sup>123</sup>

## 2. *Effect on Incidence*

As already mentioned, the imposition of the tax results in ambitions to avoid the tax effects. For instance this could happen by shifting the tax.

When the legislator imposes a tax, he is looking to make a certain group pay them. The corporate tax shall tax corporate net income and will charge firms and their shareholders.<sup>124</sup> But as this section will show, a substantial part of the tax may be shifted to workers and/or consumers.<sup>125</sup> Therefore, as is depicted in figure C-1, the

<sup>115</sup> Cf. *Hammond/Kenney/Raiffa*, Hidden Traps in Decision Making, Harvard Business Review 1998, Reprint Number 98505, 7.

<sup>116</sup> Cf. *Schneider*, Steuerlast und Steuerwirkung, 24 et seq.

<sup>117</sup> Until 2000, distributed profits to domestic shareholders were taxed at a reduced tax rate of 30%.

<sup>118</sup> The taxation will be 25%.

<sup>119</sup> According sec. 8 (1) KStG.

<sup>120</sup> According sec. 4 (4) EStG.

<sup>121</sup> Cf. *Stiglitz*, Economics of the Public Sector, 544.

<sup>122</sup> The add-back for trade tax purposes imposes further distortions. For instance, there exists a similar effect for leasing. Lease payments will not be added, therefore there is an incentive toward leasing. Cf. *Mellwig*, Investition und Besteuerung, 218.

<sup>123</sup> Cf. *Alvarez/Kanniainen/Södersten*, FinanzArchiv 1999, 285 (285 et seq.).

<sup>124</sup> Cf. *Homburg*, Steuerlehre, 124.

<sup>125</sup> This is one reason why the corporate tax remains popular: the government raises funds and since the tax can be shifted, the shareholders are not unhappy about it. Cf. *Stiglitz*, Finanzwissenschaft, 430.

This fact might be the reason for the intended tax rise of the corporate tax rate to 26,5%. Raising the individual tax rate is not considered advantageous in the year of an election, therefore raising the corporate tax is an “acceptable” solution. Most voters do not see that they will finally be burdened through tax shifting and increasing welfare losses due to distortions.

intended incidence of the tax may differ from the actual incidence of the tax. The incidence describes who bears the tax burden.

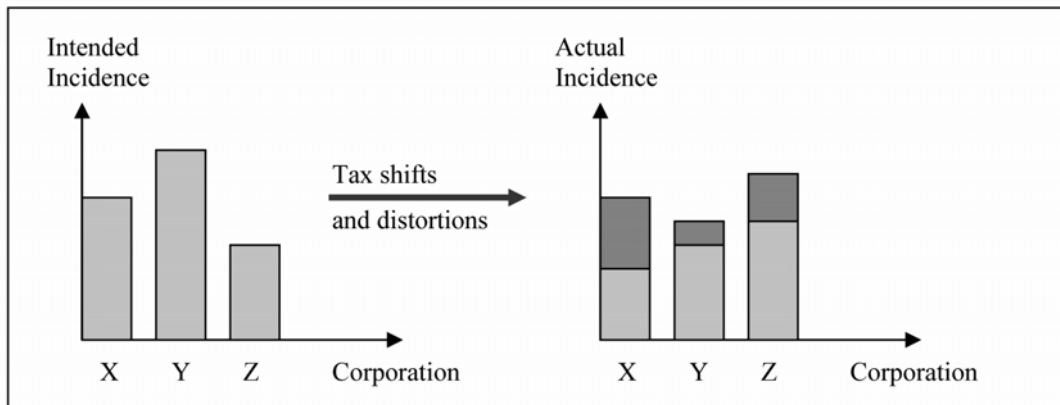


Figure C-1: Intended and Actual Incidence. Own illustration, following Homburg, *Steuerlehre*, 98.

If the employers were able to reduce the wages of the workers, the tax has been shifted backward.<sup>126</sup> If the enterprise raises prices because of the corporate tax, then the tax has been shifted forward.<sup>127</sup>

Whether or not the corporate tax can be shifted depends on three factors: the competition in the market, the elasticity of demand and the elasticity of supply.<sup>128</sup>

In a full competitive market the corporation cannot influence the price. In the short run, the capital cannot leave the corporate sector (because capital is inflexible in the short-run) and therefore the capital bears the tax.<sup>129</sup>

In the long run corporations will not reinvest (to counterbalance the depreciated capital) in favor of investments in the unincorporated sector until the return on capital after taxes is equal in both sectors. Since the return in the unincorporated sector will fall when capital increases (figure C-2), capital owners of all sectors will bear the tax.

<sup>126</sup> If wages are reduced by the amount of the tax, then the tax got fully shifted.

<sup>127</sup> Cf. *Stiglitz*, *Economics of the Public Sector*, 483.

<sup>128</sup> Cf. *Tipke*, *Die Steuerrechtsordnung* 2, 731.

<sup>129</sup> Cf. for the next paragraphs *Musgravel/Musgravel/Kullmer*, *Die öffentlichen Finanzen*, 86 et seq., 253 et seq. and *Stiglitz*, *Economics of the Public Sector*, 491 et seq.

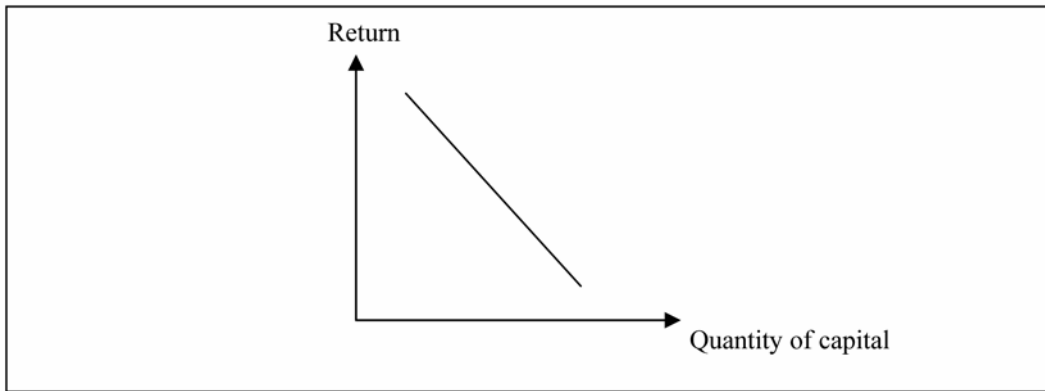


Figure C-2: *The Relation Between Return and Quantity of Capital. Own illustration, following Musgrave/Musgrave/Kullmer, Die öffentlichen Finanzen, 87.*

In the labor markets the corporation cannot reduce wages, since in a full competitive market the workers earn their marginal product independent of the profit situation.

In an imperfect market, corporations can shift the tax to consumers or workers by rising prices or reducing wages, a capital shift is not necessary. How much the consumers will bear the tax depends on the shape of the demand and supply curves.

If the supply curve is perfectly elastic (horizontal) as shown in Panel A in figure C-3 or if the demand curve is perfectly inelastic (vertical) as shown in Panel B in figure C-3 the entire burden is borne by consumers. This means that in both cases the price will rise by the amount of the tax.

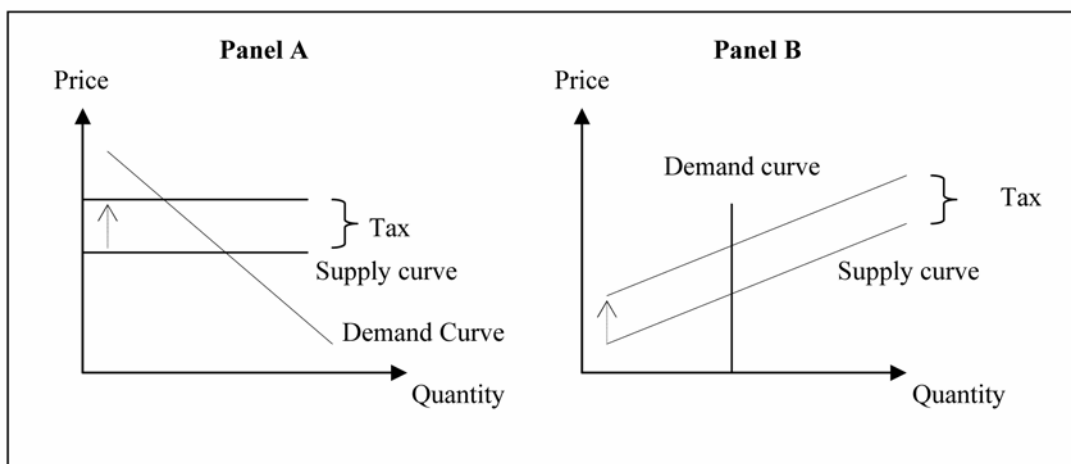


Figure C-3: *Elastic Supply Curves and Inelastic Demand Curve. Own illustration.*

This means, in general, that more tax will be shifted to consumers as the supply curve becomes flatter, or the demand curve becomes steeper.

The same principle applies to the factor market. The market position will determine the shape of the supply and demand curve and therefore determine how much of the tax will be shifted to workers. If many workers compete for few jobs then the corporation can employ workers below their marginal product, which results in a shift of the tax to workers.

If the corporation is in a monopoly position, profits will be maximized where marginal profits equal marginal costs. Since the marginal revenues and marginal costs

do not change due to a corporate income tax, the prices will not be changed. Therefore, the monopolist cannot shift the corporate tax to consumers. In the short run the tax will be burdened on capital. In the long run, capital will bear the tax as well, if the unincorporated sector is more competitive and provides an after tax return lower than in the monopolistic corporate sector. Otherwise, capital leaves the corporate sector like in the competitive situation.

Whether the tax can be shifted backward depends on the elasticity of demand and supply for labor. Usually the supply of labor is relatively inelastic. That means that the supply curve is almost vertical. Therefore, most of the tax burden can be shifted to workers.

Figure C-4 summarizes the results.

Market	Tax shifted forward?	Tax shifted backward?
<b>Full competitive</b>	<u>Short run:</u> No, corporate capital will bear the tax. <u>Long run:</u> Yes, capital of all sectors will bear the tax.	No, a backward shift is not possible.
<b>Imperfect competitive, oligopoly</b>	Yes.	Yes.
<b>Monopolistic</b>	<u>Short run:</u> No, corporate capital will bear the tax. <u>Long run:</u> Yes or No: Corporate capital or capital of all sectors will bear the tax	Yes.

Figure C-4: Corporate Tax Shifting Depending on the Competition of the Market. Own illustration.

Different empirical studies investigated the incidence question. But the studies are contradictory. The reason might be a simultaneous change in tax-unrelated factors at the same time. But even studies that explicitly isolate the impacts of the corporate tax remain inconsistent.

Finally, it can be concluded that depending on the market situation, the corporate tax may change to a tax on goods and services or on wages.

### 3. Effect on Allocation Efficiency

After investigation of the positive theory of incidence the following section will take a closer look on the normative theory of efficiency.

Suppose the market can choose between good A and good B. Line AB in figure C-5 shows the budget constraint. Good B shall be produced exclusively in the corporate sector. This could be, for instance, the cost for research and development of a cost intensive medicine.<sup>130</sup> Assume that corporate tax is shifted completely to the consumers in the market. In the first step, the tax will reduce the consumers' money to spend. Hence, the consumers spend less on all goods (line A'B'). The income is reduced and therefore this effect is called the "income effect". In the second step the consumer real-

<sup>130</sup> The high risks of these ventures are the main determinant in deciding for a limited liability corporation.

ize that Good B is now relatively more expensive than good A. Therefore, they find substitutes for it (line AC). This effect is called the “substitution effect”.<sup>131</sup> The magnitude of the substitution effect depends on the shape of the indifference curves. Flat curves mean that the substitution is easy, L-shaped curves represent the case in which there is no such effect.

However, the result is that less medicine will be produced and consumers will now have the lower level of utility  $u'$ .

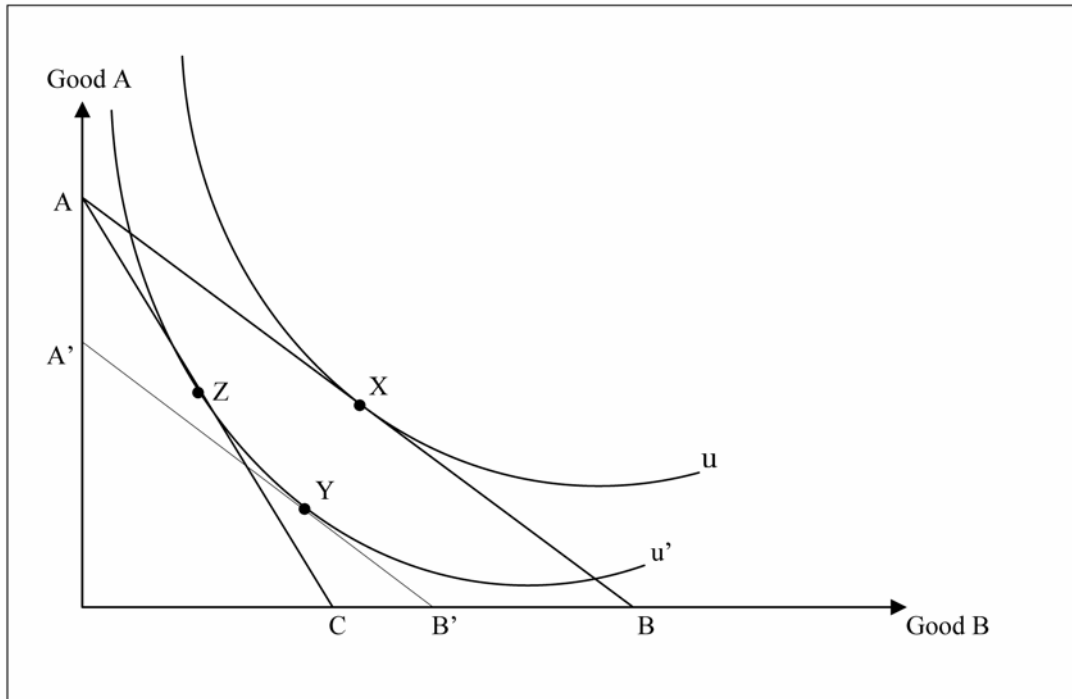


Figure C-5: Income and Substitution Effect. Own illustration.

The loss in welfare or the dead weight loss of taxation is calculated by comparing the effects with the effects of a lump sum tax.<sup>132</sup> A lump sum tax does not change relative prices. Therefore, it is non-distortionary, which means that nothing can be done to alter the tax liability. It does not result in a change in behavior.

The lump sum tax in figure C-6 moves the budget constraint down (AB to A'B'), while the corporate tax moves the budget constraint to AC. The extra revenue with the lump sum tax is the amount FY. DZ would be the extra revenue with the corporate tax. Thus, the corporate tax raises ZE less revenue. ZE is the excess burden of the corporate tax.

<sup>131</sup> An overview of the income and substitution effect can be found in *Samuelson/Nordhaus, Volkswirtschaftslehre*, 640.

<sup>132</sup> Cf. *Auerbach/Feldstein*, *Handbook of Public Economics*, in: Arrow/Intriligator (eds.), *Handbooks in Economics* 4 (2002), 1350. Auerbach points out, that this kind of measurement is not working in a setting with more than one tax. The reason is that the excess burden is affected by the order of the tax imposed (The tax is „path dependant“).

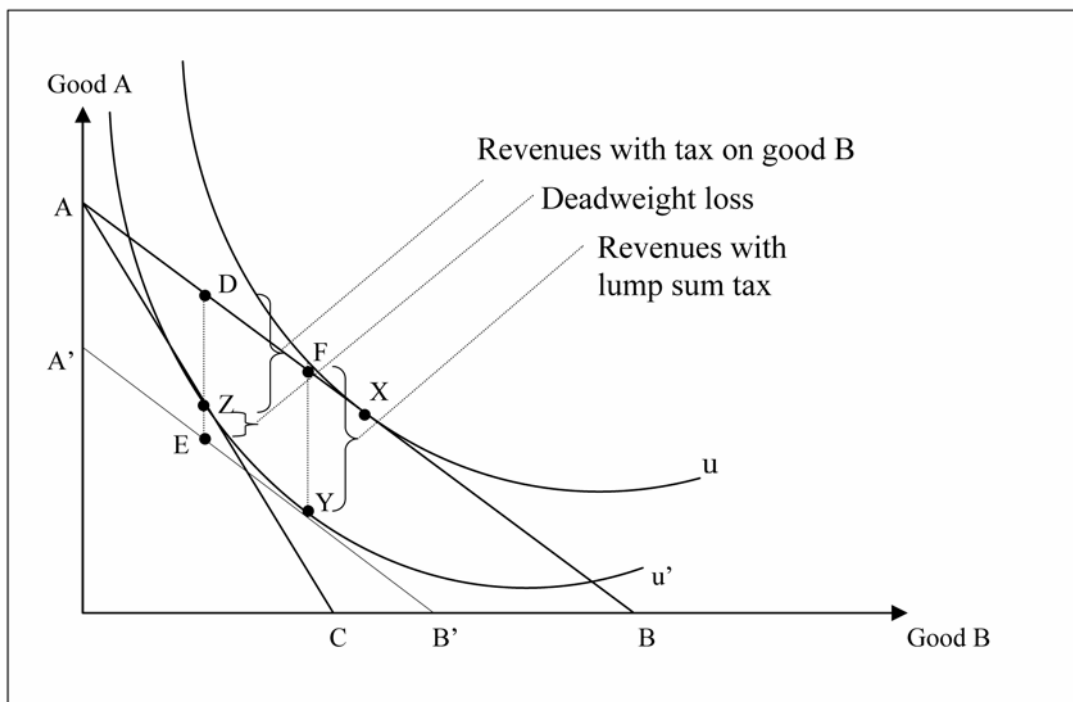


Figure C-6: Excess Burden of Corporate Taxation. Own illustration.

The same model can be used to show the inefficiency of the add backs of only 50% of interest for trade tax purposes reduces the relative price of debt (because equity is taxed to 100%).<sup>133</sup> But not only the section in the *Gewerbesteuer*gesetz (Trade Tax Act; hereinafter: GewStG) results in excess burdens, but also the entire trade tax increases the dead weight loss. This results from the fact that the trade tax is only attached to part of the producing firms, while liberal professionals will not be subject to trade tax.<sup>134</sup>

Something else applies to businesses that are not able to shift the entire tax to consumers. In this case, the consumers will share the tax burden and excess burden with the producers. Therefore, producers will bear part of the burden.

Since 2001 Germany has used a classical corporate tax system. Since the corporate tax is 25%, independent of the distribution decision but distributed dividends will be taxable at the shareholders level, there is a strong incentive to finance the corporation by retained earnings. If additional capital is needed it should be debt, due to the deductibility of interest. Retained earnings will increase the wealth at the shareholders level in comparison to the dividend distribution, because private shareholders can sell their participation tax free, if their share did not exceed 1% within the last five years<sup>135</sup> or was bought within a year<sup>136</sup>. Hence, from a tax perspective, it is inefficient to transfer wealth via dividends to households and to finance the corporation with a distribute-get back-procedure strategy. But this strategy was efficient from the corporate and

<sup>133</sup> Sec. 8 No. 1 GewStG could be seen as an imposition of a tax on equity, but more precisely it is subsidizing equity. The budget constraint moves in favor of debt outward.

<sup>134</sup> The relative price of products burdened with trade tax will increase.

<sup>135</sup> According sec. 17 EStG.

<sup>136</sup> According sec. 23 EStG.

shareholders perspective under the old Corporate Tax Law with a lower tax rate for distributed dividends. From an aggregated standpoint it can be seen that under the old system, the favorable tax treatment of dividend distribution changed the relative prices in favor of a distribution policy.

This consideration shows also that the excess burden can be avoided if the government would impose a lump sum tax or finance public goods not by taxes but rather by fees.<sup>137</sup> Both suggestions are not realizable. The first idea is not justified since the government cannot take into account the ability to pay for each individual. Since the ability is not observable, the government has to impose taxes on the observable variables, such as income. And this is unavoidably distortionary.<sup>138</sup>

The second idea is not going to work, since nobody can be excluded to use the public good; nobody is willing to pay for it.

In conclusion it has to be realized that losses on efficiency are partly inevitable. They are part of the social cost, which are necessary to provide public goods.

#### IV. Determination of the Corporate Tax Base and its Impacts

The following sections will investigate the inefficiencies, which result due to tax base determination rules.

##### 1. *Investment Distortions due to Loss Offset Constraints*

In general corporate losses may be carried backward one period or carried forward indefinitely.<sup>139</sup> This means that first, losses can be offset against gains in the year they arise and second, remaining losses may be carried backward one period or carried forward for an unlimited period of time. But there is an important rule to consider (sec. 8 (4) KStG), which will cause inefficiencies due to misleading incentives. Sec. 8 (4) KStG defines two necessary criteria to offset losses: legal and commercial identity must persist. The legal identity remains unchanged if less than 50% of their shares get transferred and less than 50% of business assets get newly infused. The result is that each change in the shareholder structure (share deal) incurs a potential to lose the loss carried forward.

This constraint causes distortions since it changes the risk preference in the market.<sup>140</sup> Consider a corporation, which can choose between two investments. Investment one shall be riskless and result in a gain of 28. Investment two shall be a risky investment, which results with a 50% chance in a gain of 80 and with a 50% chance in a loss of 20. As shown in figure C-7 the average gain will be higher in the riskier investment. How does the loss constraint effect the investment incentive? Suppose investment two is a participation, which meets the requirements to lose the loss carry-forward. A gain will be taxed at a 25% corporate tax rate, thus leaving 75% ( $\frac{3}{4}$ ). Hence, the net profit of the risky investment (with a 50% chance =  $\frac{1}{2}$ ) will be calcu-

<sup>137</sup> Cf. *Musgrave/Musgrave/Kullmer*, Die öffentlichen Finanzen, 124.

<sup>138</sup> Cf. *Stiglitz*, Economics of the Public Sector, 553.

<sup>139</sup> No. 27 CITP tells us that sec. 10d EStG is in principle applicable for corporations as well.

<sup>140</sup> Cf. *Schneider*, Steuerlast und Steuerwirkung, 153.



lated as follows:  $\frac{1}{2} * \frac{3}{4} * 80 - \frac{1}{2} * 20 = 20$ . In contrast, the riskless investment will result in a higher net profit of:  $\frac{3}{4} * 28 = 21$ .

	Probability	Gain	Probability	Loss	Average gain	Expected gain w/o loss carryforward
Riskless Investment	100%	28	100%	0	28	<b>21</b>
Risky investment	50%	80	50%	20	<b>30</b>	20

Figure C-7: Example of the Distortion due to Section 8 (4) KStG. Own illustration, following Homburg, Steuerlehre, 203.

Therefore, if no loss carryforward is permitted the investment activities will be distorted due to a decrease of the expectation value of the riskier investment.<sup>141</sup> Assuming that the investment decisions will be steady, the welfare loss is the rectangle CDEF (figure C-8). The corporation will make sure that maximal 50% of new shares and maximal 50% of newly business assets (up to point Q\*) will get infused, while the remaining budget is spent on the second best alternative. If the investment decision is a discrete one, the welfare loss will be even higher (rectangle ABEF).

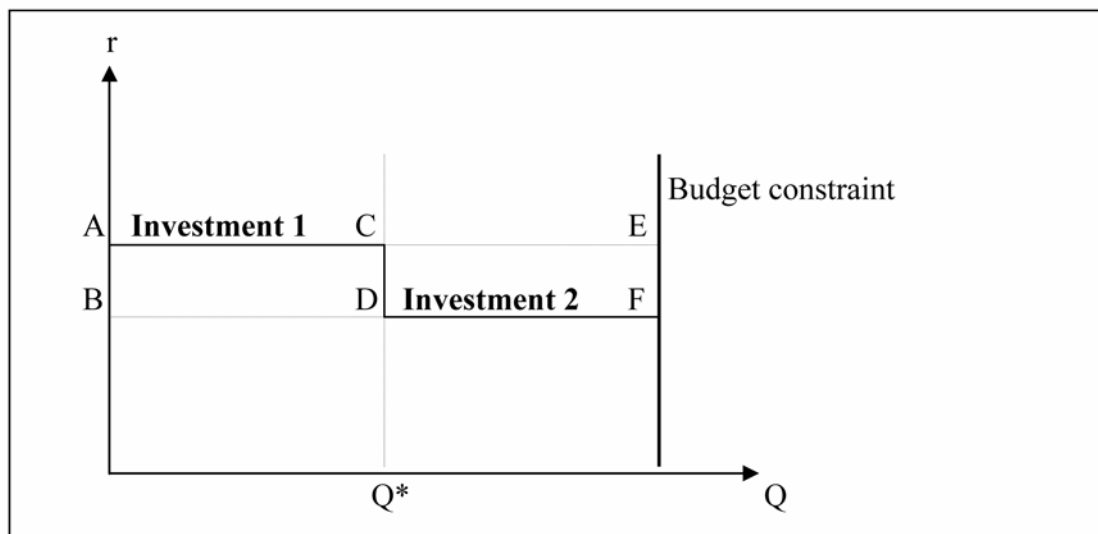


Figure C-8: Investment Decision under Section 8 (4) KStG. Own illustration.

The incentive of this loss constraint is clearly to avoid modernization above Q\*, even if it would be advantageous in a world without taxes. The result is that capital flows, not in the most efficient investment, but rather in the next best one, considered tax effects. Thus, it will depart from the efficient model of the full competitive markets, where resources would be shifted to more valuable uses.

The distortions are, in fact, even higher if it will be considered that a potential trade tax loss will, according to sec. 10 a sentence 4 GewStG, be lost as well.

If the new shareholder is another corporation and stays within the limits of sec. 8 (4) KStG, the investment up to Q\* could still make them worse off. This will happen

<sup>141</sup> Cf. Homburg, Steuerlehre, 203 et seq.

if this corporation has its own loss carryforward. This loss carryforward (that equals a future tax savings) might be lost, according to sec. 12 (3) *Umwandlungssteuergesetz* (Conversion Tax Act, hereinafter: UmwStG), just because the acquiring corporation does not invest in the acquired corporation in a similar scope and comparison as before.

Even if the corporation follows the restrictions of sec. 12 (3) UmwStG, the result is again a misallocation of resources. The law basically requires the capital to stay in the unprofitable part of the corporation but forbids necessary restructures and therefore hinders the financial resources to shift to more valuable uses.

Therefore, an unlimited loss offset should be implemented.<sup>142</sup>

But even if the corporate tax law permitted an unrestricted loss carryforward, the government would not participate in the same manner as its participation on the same amount of gains. The reason is the time value of money: a loss of 100 today is only worth less in the future. This affects the corporation's incentives pertaining to financing and investing decisions. The financing choice will be altered, because the deductible interest cannot be used today and therefore loss carryforward firms use less debt in comparison to taxable firms.<sup>143</sup> The investment choice is founded on the same reason: the depreciations and amortizations can only be used in future years. Therefore, loss carryforward firms have a smaller investment incentive.<sup>144</sup>

A positive instrument of loss utilization is the group taxation.<sup>145</sup> Since the subsidiaries annual loss is treated as the parent's income, it reduces the incentive for legal mergers. Because concentrations are considered to hinder the efficient market allocation, the group taxation reduces monopoly profits and increases the welfare of society.

## 2. *The Impact of Depreciation Rules on Allocation Efficiency*

Some assets increase in value over time, some become less valuable. Just as capital gains are added to income, capital losses (depreciation) will be subtracted from it. Corresponding to capital gains, actual depreciation should be measured by its decreases in market value (true economic depreciation). The problem is that for many goods, well-developed markets do not exist.<sup>146</sup> Therefore, the legislator defined in sec. 7 *Einkommensteuergesetz* (Income Tax Act; hereinafter: EStG) methods to approxi-

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<sup>142</sup> This is also the prevailing opinion in the Literature. Cf. for instance *Schneider*, *Steuerlast und Steuerwirkung*, 153. But Schneider does not hide that an immediate loss offset has disadvantage as well. He suggests voucher with the right to offset losses as a market conform instrument. *Schneider*, BB 1988, 1222 (1228).

<sup>143</sup> Cf. *Zerbe*, *Economic Efficiency in Law and Economics*, 14 et seq.

<sup>144</sup> Cf. *Zerbe*, *Economic Efficiency in Law and Economics*, 14 et seq. Auerbach and Poterba empirically found that for American corporations with loss carryforwards the effective tax rate on the plant and equipment is higher than for taxable firm, while the effective tax rate for investment in assets with high tax burden (usually those assets have long deprecation lives) is lower. The latter results due to the fact that the gain from postponing tax payments excess the loss from postponing its tax depreciation benefits. Cf. *Auerbach/Poterba*, *Tax Loss Carryforwards and Corporate Tax Incentives*, in: National Bureau of Economic Research: Working Paper Series, 24 et seq., 45 et seq.

<sup>145</sup> Secs. 14 to 10 KStG.

<sup>146</sup> Cf. *Stiglitz*, *Economics of the Public Sector*, 496.

mate actual depreciation.<sup>147</sup> The following section will take a closer look at the incentives imposed by different depreciation methods and investigate the reasons for distortions.

Assets, which are used longer than a year, will depreciate according to the straight line method (sec. 7 (1) EStG). An accelerated depreciation is possible for movable assets and for certain buildings or building parts (sec. 7 (2) ITA).

Extraordinary depreciation is allowed for straight line depreciated assets (sec. 7 (2) EStG) in case of technical or economic depreciation. Some industries may depreciate assets according the decrease in substance (sec. 7 (6) EStG). Furthermore, a full depreciation is allowed for certain defined assets (6 (2) EStG)<sup>148</sup> or a special depreciation is available to promote specific investments (sec. 7a-7k EStG).

The problem is that methods, which depreciate faster than true economic depreciation result in a lower effective tax rate. The effective tax rate is a function of different variables such as the nominal tax rate as well as the depreciation method. It shows the percentage change in profit due to taxation.<sup>149</sup> The reason for the lower effective tax rate is that the faster acceleration will postpone tax payments. Therefore, it equals an interest-free credit or a subvention of assets.<sup>150</sup>

Figure C-9 (For the full table see appendix 1) compares different methods of depreciation over eight years with revenues of 17.<sup>151</sup> The interest rate is assumed to be 10%; the corporate tax rate is 25% (sec. 23 KStG). In case of a true economic depreciation, the tax does not alter the investment incentive. The present value before taxation equals the present value after taxation. The other methods, in comparison, increase the depreciation in the first years. Therefore, the present value of the depreciation increases. Considering that an asset leads into two income streams, a positive one due to revenues and a negative one due to depreciation, it can clearly be seen that the other methods increase the negative income stream in the first years and therefore postpone tax payments. And since a Euro saved tax today has more worth than a Euro saved tax tomorrow, the after tax present value will increase.

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<sup>147</sup> Sec. 7 (1) KStG icw. sec. 8 (1) KStG refer to determine corporate income to the EStG. Sec. 5 (4) EStG states that the depreciation rules are to be followed.

<sup>148</sup> The rule applies for movable, depreciable, non-current assets, which are independent, appraisable, and useable and their cost does not exceed 410 Euro.

<sup>149</sup> Cf. *Musgrave/Musgrave/Kullmer*, Die öffentlichen Finanzen, 263.

<sup>150</sup> For instance, in 1997, the effective tax rate for certain investments in East Germany was minus 228. This means that a 10% return before taxes transferred in a 32,8% return after taxes. Cf. *Schneider*, Steuerlast und Steuerwirkung, 135.

<sup>151</sup> All numbers are rounded.

	<b>True economic depreciation</b>	<b>Straight line depreciation</b>	<b>Accelerated depreciation</b>	<b>Special depreciation</b>	<b>100% depreciation in the first year</b>
<b>Pre tax present value</b>	100	100	100	100	100
<b>After tax present value</b>	100	100	101	104	105
<b>Present value of depreciation</b>	70	73	77	93	100

Figure C-9: Present Values of Different Depreciation Methods. Own illustration.

Also, in appendix 1, it can be seen that if a corporation invests only once, the faster depreciation will not change the total amount of tax payments. The amount that the government loses in the first year will be paid in the later years. A different result will follow, if the corporation replaces the assets as they wear out. In this case, the tax payment will be postponed indefinitely.<sup>152</sup>

The results are as follows: First, investments are constantly encouraged and second, investment pattern will be distorted in two ways: On one hand, long-term investments are significantly subsidized. On the other hand, this results in distortion between entire industries, since certain industries (like mining) use primarily long-term assets, while other industries have to replace their assets more often.

But those results do not always emerge. The benefits of early depreciation will melt away if there are not enough profits to counterbalance the capital losses.<sup>153</sup> Further, if the corporate tax rate is expected to rise, higher depreciation will be more favorable in the years of the tax rate rise.

A practical objection is the empirical observation that managers try to keep the dividend stable to attract future investors. Therefore, they might dispense an early use of depreciation.<sup>154</sup>

What could be done to increase investment allocation? Two suggestions exist:<sup>155</sup> First, true economic depreciation should be used, but as already mentioned, this measurement is very difficult. The government's treasury management issues depreciation tables with standardized physical life. This is positive because the government tries to publish realistic physical life. But the allowed depreciation period is often shorter than the realistic physical life.<sup>156</sup> Positive is also that since 1987 the goodwill can be amortized. For instance, the corporations in the United States do not amortize the goodwill and therefore, under the ceteris paribus assumption, corporations depart further from true economic depreciation.

<sup>152</sup> Cf. *Musgrave/Musgrave/Kullmer*, Die öffentlichen Finanzen, 265 et seq.

<sup>153</sup> As already discovered in section C.IV.1. the investment incentives are reduced. But there are still strategies to overcome these disadvantages. One would be to merge with a profitable corporation; another would be to lease the assets from a profitable corporation. The tax paying corporation could reduce their effective tax rate and transfer part of the savings to the leaser via the lease rate. Cf. *Stiglitz*, Finanzwissenschaft, 551.

<sup>154</sup> Cf. *Schneider*, Steuerlast und Steuerwirkung, 125.

<sup>155</sup> Cf. *Stiglitz*, Economics of the Public Sector, 597.

<sup>156</sup> Cf. *Stiglitz*, Finanzwissenschaft, 549, supra note 21.

The second suggestion is to allow a 100% deduction in the first year.<sup>157</sup> The government will reduce the cost of the investment project uniformly to the reduction of revenues. Therefore the government can be seen as a silent partner, who pays its part of the cost and will participate on the later gains.<sup>158</sup> The second suggestion will also avoid distortions due to inflation. If replacement costs rise and the deduction is based on historical cost then the capital loss will be greater than the tax savings. Otherwise, this might discourage most investments in high inflation periods.

## V. The Impact of Taxation on Corporate Financial Structure

On financial markets, money is offered in exchange for rights to receive income later.<sup>159</sup> The question in this section will be, how taxation alters the incentives for the market participants and therefore modify the financial structure.

The guiding principle will be financing neutrality, which means that taxation does not affect the financial policy.<sup>160</sup> On a micro-perspective the tax is neutral if it does not change the decisions about investment, financing and inter-temporal consumption. On a macro-perspective, statements will be derived, if the tax distorts the allocation of capital.<sup>161</sup> In this setting, financial policy relates to two questions: First, how much of earnings will be retained to raise equity and second, in which relation will capital be divided into debt and equity.<sup>162</sup>

### 1. Equity Policy

Corporations face two options pertaining to the source of equity. Firstly, we observe internal funds such as retained earnings and secondly, external funds such as contributions from shareholders.

External equity funds are more costly to the firms than internal funds. Since the cost of capital is constant for internal funds as well as with each new share issue, the supply schedule  $S$  is (discretely) upward sloping, as shown in figure C-10. The demand curve  $D_H$  reflects corporations with high levels of investment demand, the curves  $D_M$  and  $D_L$  companies with medium and low investment demand.

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<sup>157</sup> Schneider argues that the full deduction in the first year should not be limited to the cost, rather he says that the present value should be deductible. Cf. *Schneider*, Steuerlast und Steuerwirkung, 126.

<sup>158</sup> Cf. *Stiglitz*, Finanzwissenschaft, 550.

<sup>159</sup> Cf. *Schneider*, Steuerlast und Steuerwirkung, 169.

<sup>160</sup> This will result if the tax does not impact liquidity, risk or rentability. Cf. *Schneider*, Steuerlast und Steuerwirkung, 169.

<sup>161</sup> Cf. *Thiede*, Ökonomische Analyse der Körperschaftsbesteuerung, 16 et seq.

<sup>162</sup> Cf. *Auerbach/Feldstein*, Handbook of Public Economics, in: Arrow/Intriligator (eds.), Handbooks in Economics 4 (2002), 1253.

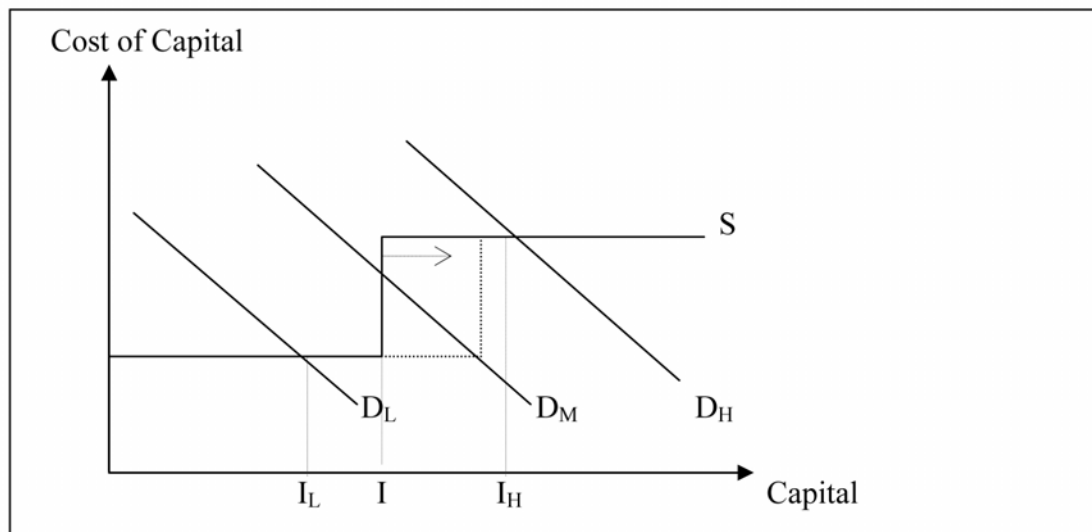


Figure C-10: Equity Policy. Own illustration.

For corporations with high investment demand the internal funds are not sufficient. Thus, they will issue shares to raise the capital from  $I$  to  $I_H$ .

Alternatively, there might be firms, which have more retained earnings available than the amount needed to finance their projects ( $D_L$ ). Those firms will distribute the exceeding amount ( $I_L$  to  $I$ ) as dividends. Neither new shares, nor dividends will be distributed to firms, whose demand schedule is  $D_M$ .<sup>163</sup>

A reduction of the corporate tax would increase internal funds. This is shown by a shift in the supply schedule  $S$ . More investments may be now financed through internal funds.

This consideration highlights the arguments of *Schreiber/Rogall* that the 2001 tax reform favored self-financing of corporations. Corporations that finance investments through new shares, which are usually new firms, are disfavored. The results are restrictions of the functionality of the capital market as well as an increased risk of misallocating capital.<sup>164</sup>

## 2. Debt-Equity Decisions

Next to equity sources, corporations may decide to obtain debt to finance their projects.<sup>165</sup> Why is debt an alternative to equity? There are several explanations:<sup>166</sup> First, due to the leverage effect debt will increase the shareholders rate of return. Second, the mixture enables different risk-return alternatives to meet the diverse preferences of creditors and stockholders. Third, the large number of shareholders causes a free-rider problem since nobody has an incentive to spend extra money to monitor the managers.<sup>167</sup> Large creditors will usually do that and thus reduce agency costs. Fourth,

<sup>163</sup> *Ibid.*, 1260 et seq.

<sup>164</sup> Cf. *Schreiber/Rogall*, Die Betriebswirtschaft 2000, 721 (722 et seq., 733 et seq.).

<sup>165</sup> Cf. *Wöhe*, Steuern des Unternehmens, 176 et seq.

<sup>166</sup> Cf. *Posner*, Economic Analysis of Law, 397 et seq.

<sup>167</sup> Since auditors and a Supervisory Board of directors are required, shareholders pay indirectly to monitor the managers.

interest on debt has to be paid according to secs. 608, 609 *Bürgerliches Gesetzbuch* (hereinafter: BGB)<sup>168</sup> and the principal is to be paid back according to sec. 607 BGB.<sup>169</sup> Those obligations increase the risk of bankruptcy and therefore impose costs on managers.<sup>170</sup> For this reason, debt is a method for investors to keep managers faithful. And fifth, the deductibility of interest from the corporate tax base makes debt a cheaper source of capital.<sup>171</sup>

In the field of financing, economic efficiency requires that the taxation neither favors equity nor debt. But empirically, it is found that the financial structure is well dependent on tax rules. From a corporate, as well as from an investor's point of view, the deductibility of interest makes debt a cheaper source of capital. On the corporate level, the corporate tax base will be lowered by interest payments, while dividend returns to shareholders will not be relieved. This also clarifies the impact of the corporate tax rate on the debt/equity structure. As the tax rate rises, interest payments become more valuable, since they become relatively cheaper than equity returns. Several empirical studies, in fact, find that the corporate debt level responds to changes in relative corporate tax rates.<sup>172</sup>

Not only the corporation, but also most private investors will have an incentive to decide for debt. Although on the investor's level, interest income will be taxed normally, while dividends are only included half in the tax base, the full relief of corporate tax and the half relief from trade tax of the corporate level will usually overcompensate the higher individual income tax.<sup>173</sup>

As one of the first scholars, *Merton Miller* argued that the decision of whether an investor will decide for debt or equity is dependent on the investor's tax rate. He assumed that equity and debt have the same pretax return and both have the same risk. If dividends are tax exempted and interest will be taxed, then the demand for debt will be dependent on the tax rate of the investor, while the demand for equity will not.<sup>174</sup> This is demonstrated in figure C-11.

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<sup>168</sup> In contrast to shareholders, they only have a right to dividends if there is a profit. See for example sec. 58 (4) Aktiengesetz (Stock Act).

<sup>169</sup> In contrast to equity, which might be used up by losses.

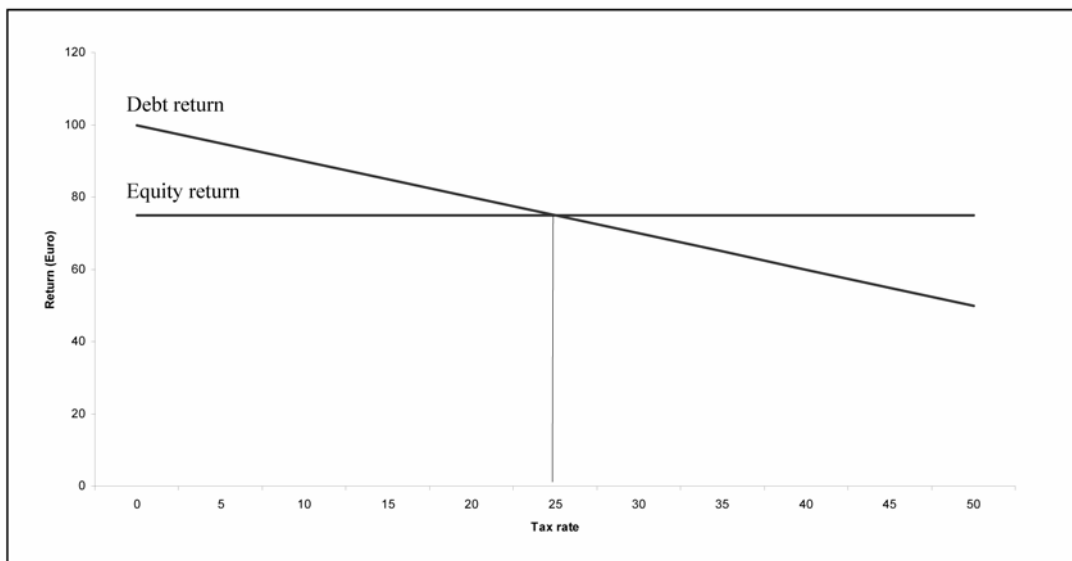
<sup>170</sup> A higher debt level puts the fear of bankruptcy into managers minds. Therefore they have an incentive to avoid failure in order to prevent the loss of their salary, a pay cut, or the reduction of their social reputation. Cf. *Easterbrook/Fishel*, *Economic Structure of Corporate Law*, Cambridge 114.

<sup>171</sup> The interest is according to sec. 4 (4) EStG considered to be a deductible business expense, while dividends are not deductible according to sec. 8 (3) KStG. Attention should be paid to the fact that interest cannot be deducted, if the connected loan is used to obtain tax free income (sec. 3c (I) EStG). This will be the case, if the corporation wants to invest in other corporations.

<sup>172</sup> For instance a one-point increase in corporate tax in Canada results in  $\frac{3}{4}$  point increase in corporate debt/equity structure. Cf. *Crane*, *Corporate Taxation*, 6.

<sup>173</sup> Cf. *Gratz*, DB 2002, 489 (490).

<sup>174</sup> Cf. *Auerbach/Feldstein*, *Handbook of Public Economics*, in: *Arrow/Intriligator* (eds.), *Handbooks in Economics* 4 (2002), 1120 et seq.



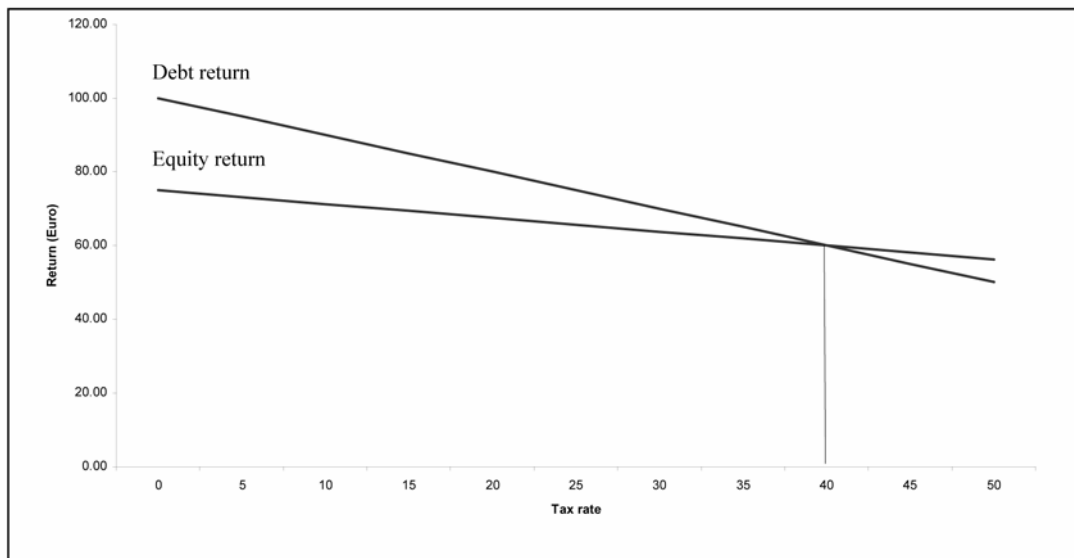
*Figure C-11: Financing Decision in Dependence of Personal Tax Rate. Own illustration, following Auerbach/Feldstein, Handbook of public economics, in: Arrow/Intriligator, Handbooks in Economics 4 (2002), 1121.*

The intersection between the demand curves is the corporate tax rate of 25%. Investors with a tax rate burden above this threshold will prefer equity, since the interest return will be taxed at a higher rate than 25% on the investors level.

Conversely, if the investors face a lower tax rate than 25%, they will prefer debt.

Applying the model to the German tax rules, the chart would change as shown in figure C-12. It is striking that the equity curve is now downward sloping. This results due to the fact that dividends are not tax exempted for individual shareholders. Rather, half of the dividend will raise the tax base. The calculation shows that the indifferent investor faces a tax rate of 40%. Since most investors are taxed below this rate, there will be – at least from a macroeconomic standpoint – too much debt demanded.





*Figure C-12: Financing Decision in Dependence of Personal Tax Rate with Consideration of the Half Income System. Own illustration.*

If the model were enlarged by including the trade tax, another distortion can be found. According to sec. 8 No. 1 GewStG, only half of the interest will be added to the trade tax base. Since the normative goal is to attain financing neutrality, 100% should be added. Because dividends are included 100% in the tax base, the trade tax act sets another incentive to prefer debt.<sup>175</sup> Assuming a municipal multiplier of 500, as depicted in figure C-13, our marginal investor now prefers debt to a 50% individual tax rate.

<sup>175</sup> Cf. *Schneider*, *Steuerlast und Steuerwirkung*, 75.

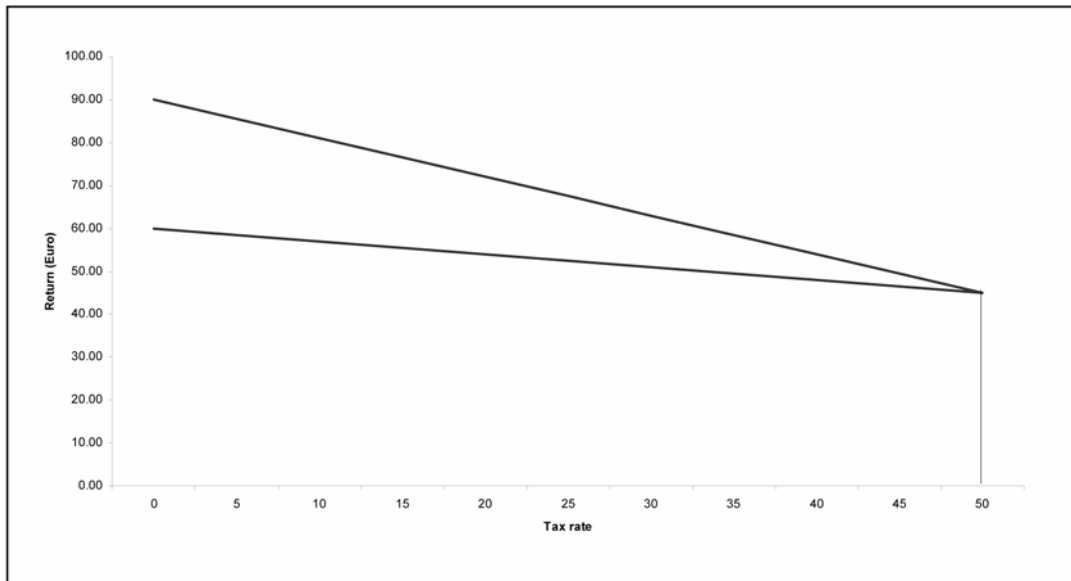


Figure C-13: Financing Decision in Dependence of Personal Tax Rate with Consideration of the Half Income System and Trade Tax. Own illustration.

If the investor is a corporation, the 50% add back for trade purposes will also result in an incentive to contribute debt. Even though dividend income is tax exempted the spread between debt and equity return will not be closed (See figure C-14). The total remaining after taxation will be 60,00 for dividend payments. But since debt return would leave 67,50, it is still advantageous to contribute debt. Under the assumption that 100% of interest would be taxed with trade tax, the corporation would be indifferent between debt and equity contribution.

	Equity-financing	Debt-financing	Debt-financing with 100% Add back
Dividend/interest	100	100	100
- Trade tax (500% municipal multiplier)	- 20	- 10	- 20
= Tax base for corporate tax	80		80
- Corporate tax (25%)	- 20		
Payment to investor	60	90	80
Corporate tax at the shareholder level (25%)	/	- 22,50	- 20
<b>Remain</b>	<b>60</b>	<b>67,50</b>	<b>60</b>

Figure C-14: Distortion due to Section 8 No. 1 GewStG. Own illustration.

Despite the strong incentive for debt financing, there is empirical evidence that investors in low tax rate brackets or even tax exempted investors will still hold equity. How could this phenomenon be explained? One reason is that the model does not

take into account that the investment structure will also differ with respect to risk.<sup>176</sup> Another reason is that the cost of borrowing will rise quickly as more debt is used, thus, the tax benefit will melt away.<sup>177</sup> Furthermore, larger debt means less return can be realized in the form of tax free, capital gains. Instead of dividend payments the shareholders could decide according to sec. 174 *Aktiengesetz* (Stock Act) to retain the earnings. Corporate shareholders and private shareholder investors holding a stake of 1% or less for more at least one year enjoy tax-free capital gains. All other investors still may feel encouraged towards equity due to the postponement of tax payments (because capital gains are taxed only upon realization).<sup>178</sup> This explains why an all debt policy is not favored as first expected.

However, it can be seen that the tax law offers many incentives to alter the capital structure. *De lege ferenda* suggestions are for instance, to treat all corporate earning as return on debt financing<sup>179</sup> or to apply the Half Income System to all types of capital<sup>180</sup> or to not allow the deduction of interest<sup>181</sup>. Alternatively, countries like the US have had good results with a Corporate Alternative Minimum Tax (AMT), which defines its own rules for deductions and add backs to ensure a minimum taxation. The AMT allegedly decreases the distortionary impact of corporate taxation on the allocation of capital because it reduces the effective tax rate on equity-financed investments and vice versa on debt-financed investments.<sup>182</sup>

But even if the German tax law would avoid these distortions, from a global perspective the allocation could be still inefficient. To achieve efficiency at a worldwide level, the pretax rate of return on capital would need to be the same in all countries.<sup>183</sup>

Consider that in a world without rules the market will “invisibly” allocate the (financial) resources optimal (into debt and equity). If the tax rules favor either equity or debt, then individual rational adaptation will result in misallocation from an aggregated point of view.

## VI. The Impact on Share Disposal Versus Dividend Distribution

This section will shed light on two aspects: First, the incentives and distortions of the different treatment of distributed, in comparison to retained, earnings and second, the incentives and distortions of share disposal.

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<sup>176</sup> Cf. *Auerbach/Feldstein*, Handbook of Public Economics, in: Arrow/Intriligator (eds.), Handbooks in Economics 4 (2002), 1273. Investors will hold portfolios diversified with regard to the degree of absolute risk aversion.

<sup>177</sup> Cf. *Crane*, Corporate Taxation.

<sup>178</sup> Cf. *Stiglitz*, Journal of Public Economics 2 (1973), 1 (7).

<sup>179</sup> Cf. *Crane*, Corporate Taxation, 6.

<sup>180</sup> Cf. *Fuest/Huber*, FinanzArchiv 2000, 514 (523).

<sup>181</sup> Cf. *Schneider*, Steuerlast und Steuerwirkung, 186. At the same time, the trade tax, or at least the add-backs of 50% of the interest for long-term debt, should be abolished.

<sup>182</sup> Cf. *Bernheim*, Incentive Effects of the Corporate Alternative Minimum Tax, in Tax Policy and the Economy 3 (1989), 71 et seq.

<sup>183</sup> Mintz suggest the use of a formula approach to allocate corporate income to jurisdiction to achieve the objectives of neutrality and revenue protection. Cf. *Mintz*, FinanzArchiv 1999, 389 (390 et seq.).

### 1. *Disparity in Tax Treatment*

Under the classical corporate tax system, dividends will either be taxed according to the Half Income System (natural persons, sole proprietors, partners) or be tax exempted (legal persons).

The tax burdens for legal persons upon distribution or retention are identical.<sup>184</sup> Both alternatives result in a definite tax burden of 25%. Therefore, the investment return will flow to the party (corporation or corporate shareholders) according to where the most profitable projects can be realized.

A different result can be found for individual shareholders. From their perspective retaining will have a positive effect. This arises from the additional taxation upon distribution. The additional inclusion of 50% of dividends into the personal income tax base will result in tax resistance and tax avoidance strategies.<sup>185</sup> The resulting strategy will be the avoidance of distribution, because the relative utility of distribution will be lowered.

Despite the fact that this strategy will be efficient from an individualistic point of view, from an aggregated standpoint it will hinder the optimal market allocation. If dividend distribution and retained earnings were treated equally, the capital would flow to the projects with the highest difference between marginal revenue and marginal cost. Suppose the net income of a corporation is the only source of capital and can be reinvested by either the corporation itself or be used by the individual shareholder. Both have different investment possibilities, but the budget is restricted to a total of three projects. In a world with equal treatment of dividends and retained earnings the capital cost for both potential investors shall be 25.<sup>186</sup> The marginal revenue differs as is depicted in figure C-15.<sup>187</sup> In that setting, project 1 and 2 of the individual shareholder will be realized as well as project 1 of the corporation. The total profit will be  $25+15+20=60$ . If the individual shareholder has to tax the dividend income, the cost of capital will rise, say to 50 for all projects. From the perspective of the two players it will now be advantageous to realize all three possible projects by the corporation. From an aggregated standpoint this will result in a profit of 35 plus the additional raised tax by the government. Since no dividend was distributed, the government's additional revenue will be zero. The overall loss is therefore  $60-35=25$ , or 41,6%.

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<sup>184</sup> The cash-flow disadvantages due to the payment and later credit of the withholding tax shall be neglected.

<sup>185</sup> Cf. *Pöllath*, DB 2002, 1342 (1343).

<sup>186</sup> A rise in the individual tax rate due to higher dividend income shall not be considered.

<sup>187</sup> To be very precise, the corporation has to pay trade tax on corporate income as well. Thus, a different treatment of returns persists even in absence of the tax at the shareholders level.

Investor	Project	Marginal Cost	Marginal Revenue	Profit	Order before tax	Order after tax
Corporation	1	25	45	20	2	1
	2	25	35	10		2
	3	25	30	5		3
Individual shareholder (no dividend taxation)	1	25	50	25	1	
	2	25	40	15	3	
	3	25	30	5		
Individual shareholder (dividend taxation)	1	50	50	0		
	2	50	40	-10		
	3	50	30	-20		

Figure C-15: Effects of Dividend Taxation on Realized Investment Projects. Own illustration.

This example illustrates that the additional tax on the shareholders level for distributed dividends hinders the reallocation of resources into more productive alternatives, at least as long as the profit cannot compensate for the additional tax payments. Therefore, the tax will influence not only the capital accumulation but also investment decisions. In the absence of further non-tax benefits, the corporation with individual shareholders will distribute earnings if it does not have better investment opportunities.<sup>188</sup>

The different treatment of distributed and retained profits causes the so-called “lock-in” effect. The government imposes additional costs on distribution of corporate profits on individuals, sole proprietors and partners. Thus, the profits are effectively locked in the corporation, which is an intended incentive. The government expects to strengthen the equity base of the corporations, to encourage more investments and employment.<sup>189</sup> *Schneider*, for instance, criticizes the incentive structure.<sup>190</sup> He argues that the abolished capital gains taxation will indeed increase the available financial resources, but he doubts that it will exclusively be used for new investments. Instead, the money could also be used for consumption, credit repayments or investments abroad.

<sup>188</sup> Cf. *Gratz*, DB 2002, 489 (492 et seq.).

<sup>189</sup> Cf. BT Drucksache 90/00, vom 14.2.2000, Entwurf eines Gesetzes zur Senkung der Steuersätze und zur Reform der Unternehmensbesteuerung – Steuersenkungsgesetz – StSenkG, 123 et seq.

<sup>190</sup> Cf. *Schneider*, Steuerlast und Steuerwirkung, 159 et seq.

## 2. *Welfare Effects of Capital-gains Taxation*

Another way, besides dividend distribution, to realize returns, would be through the sales of shares, which is generally tax-exempted for natural as well as for legal persons.<sup>191</sup> Sole Proprietors and partners in contrast, will generally be taxed with capital gains tax on share disposal. Capital gains are increases in the value of assets above the cost at purchase. Under the German tax regime only realized capital gains will be subject to taxation.

### a) *Postponement of Disposal*

How does the different treatment of disposals affect the incentive structure? Corporate shareholders will compare the return<sup>192</sup> of the invested capital with alternative investments. If other projects promise a higher return and if the transaction costs are below the additional profit, the corporation will restructure the investment portfolio.

A different consideration is made by individual shareholders, who are taxable upon share disposal due to a participation above 1% or disposal within a year, sole proprietors and partners. They also compare the return of the current and potential investment. But the new project must not only compensate for the transaction cost but also the additional tax upon liquidating the financial resources. The relative utility of restructuring will be lower. Therefore, less new investments will be made. In this case, the capital is, also hindered to flow into more productive investments.

Corresponding to the “lock-in” effect of profits, the extra tax costs upon share disposal for individuals, sole proprietors and partners will result into a “lock-in” effect of capital gains. This “capital-gain-lock-in” effect will occur on the shareholders level. Since these investors have an incentive to avoid the capital gain taxation the capital gains will keep locked in the current investments. Under this view the introduction of sec. 6b (10) EStG was a positive change.<sup>193</sup> But unfortunately this rule is limited to sole proprietors and partners. Furthermore, not all capital gains can be rolled over. To avoid the entire welfare loss, full decision neutrality is necessary. Therefore, from an aggregated point of view, all investors should be able to avoid all capital gain taxation.

It should be mentioned conclusively, that the lock-in effect will result by a *ceteris paribus* consideration of tax effects. If other decision determinants will be allowed, an “anti-lock-in” effect might follow. For instance dividends might be distributed if shareholders cannot see through the corporate veil and thus the corporation pays dividends to signal a sound situation and to keep shareholders in a good mood.<sup>194</sup>

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<sup>191</sup> For exceptions see footnotes 98 and 99.

<sup>192</sup> The after tax return should be considered since, due to the special treatment of certain investments, the effective tax burden might change.

<sup>193</sup> It allows sole proprietors and partners (natural persons only) to transfer capital gains from the sale of a corporation up to 500.000 Euro on the acquisition cost of new shares or other moveable assets within two years, or on buildings within four years.

<sup>194</sup> This phenomenon is the called dividend paradox. Cf. *Stiglitz*, *Economics of the Public Sector*, 663 et seq.

Moreover, capital gains might not be locked in, if the shareholders need the money for consumption. A capital gain tax forces the shareholder to sell more assets as in a world without such a tax. The reasons are first, the need to finance the tax payments and second, to make good for the reduced market prices of the assets.<sup>195</sup>

### *b) Strategies due to Capital-gains Taxation*

The difference in capital gain taxation will result in various taxation avoidance strategies. The incentive for such strategies correlates with the tax burden. Therefore, non-corporate shareholders have a higher motivation for tax avoidance than corporate shareholders.

A simple strategy is the “buy and hold strategy”. As already described, the shareholder can avoid tax payments by not selling the shares. The shareholder may even be able to avoid the tax entirely if he keeps the shares infinitely.<sup>196</sup>

If a shareholder holds more than 25% of shares, worth less than 256.000 Euro, no death tax will be imposed either (sec. 13a (4) No. 3 *Erbschaftsteuergesetz* (Death and Gift Tax Act)).<sup>197</sup> The social effect of that strategy is a welfare loss, since the government does not raise any additional money but the shareholders lost the additional pretax return of alternative investments.

Never selling the shares might not always be the dominant strategy. Shareholders, who are subject to capital gain tax, might want to use a possible capital loss to offset other profits. From an individualistic point of view, this will be an efficient decision. But from an aggregated standpoint, the government will lose revenues while investors might actually sell (relatively) profitable investment just because of a temporary capital loss.

A different timing strategy would be to dispose excellent investments too early. This might happen if shareholders intend to liquidate the investment for upcoming, better investments in the next years and expect a rising tax rate or a higher tax bracket in the future. The welfare loss is in that case the forgone higher return in the original investments in the period between disposal and new investment. This example illustrates that distortion might not occur only from capital gains taxation, but also from changes in the tax code or the proportional income tax rate.

### *3. Welfare Effects of Integration of Corporate into Individual Tax*

In the following section, it will be investigated, whether the integration is desirable pertaining to allocation efficiency and which methods might be applied.

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<sup>195</sup> Cf. *Schneider*, *Steuerlast und Steuerwirkung*, 159 et seq.

<sup>196</sup> Cf. *Crane*, *Corporate Taxation*, 7.

<sup>197</sup> The rule sec. 13a *Erbschaftsteuergesetz* (Death and Gift Tax Act) is currently challenged before the supreme court because it might harm article 3 of the German federal constitution. File number: II R 61/99 of 22.05.2002.

a) *The Relation Between Corporate and Individual Tax*

The position of the corporate tax in the tax system is not undisputable. On one hand, scholars consider the corporate tax as a separate tax on income of corporate entities, while others consider the tax a part of the individual income tax.

▪ **Separation Theory**

Representatives of the separation theory argue that corporations are legal entities with their own power and will, which are administered by managers, who are insignificantly controlled by shareholders. Hence, these supporters infer their own ability to pay taxes.<sup>198</sup> The separation principle becomes accomplished by a classical corporate tax system. Retained profits will be taxed separately, while distributed profits will be taxed on the shareholders level with their individual income tax rate.

From an individualistic point of view the classical system offers the advantage that the low taxed retained earnings can be reinvested and increase the value of the corporation. A later capital gain on share disposal will be tax free for most shareholders.<sup>199</sup> From an aggregated standpoint many objections exist against the classical tax system.

First, the corporate form will be discriminated upon, considering the corporate and the shareholder level. Corporations will be treated differently, since there exists a double taxation of the corporation and the shareholder. Also, regarding the fact that owners of incorporated firms are not allowed to deduct the trade tax on a lump sum basis from their personal income tax base, this results in lower after tax returns in the corporate sector, which in turn will result in deinvestment until the net profits are equal in all sectors.<sup>200</sup>

Second, the usage of profits will be distorted. A lower effective tax on retained earnings creates incentives to retain earnings and thus violates the capital usage neutrality.<sup>201</sup>

Third, the classical corporate system burdens only the corporate profits if there no distortion exists. As already concluded in section C.3.2, the corporate tax might be shifted. Therefore, the corporate tax arbitrarily changes into a sales or wage tax.

Fourth, the corporate tax imposes a minimum tax. Shareholders who receive dividend income within the subsistence level will not receive their investment returns free of tax.

Fifth, due to double taxation, profitable firms have an incentive to not incorporate. Therefore, the society loses some of the non-tax advantages of having incorporated firms.<sup>202</sup>

Sixth, the classical system does not improve distribution at the expense of allocation efficiency according to a supposed trade-off between those two goals, rather, it will distort both.<sup>203</sup>

<sup>198</sup> Cf. *Musgrave/Musgrave/Kullmer*, Die öffentlichen Finanzen, 225.

<sup>199</sup> Schneider argues that the influence of those preferred groups was an important factor to change the tax system in 2001 to favor the classical corporate system. *Schneider*, Steuerlast und Steuerwirkung, 61.

<sup>200</sup> Cf. *Musgrave/Musgrave/Kullmer*, Die öffentlichen Finanzen, 224.

<sup>201</sup> Cf. *Siegel* et al., BB 2000, 1269 (1269).

<sup>202</sup> Cf. *Fuest/Huber*, FinanzArchiv 2000, 514 (516).

<sup>203</sup> Cf. *Pohmer*, Einfluß der Wissenschaft auf die Finanzpolitik.



### ▪ Integration Theory

The argument of the representatives for the integration theory is, that in the end, all taxes must be paid by natural persons.<sup>204</sup> Enterprises are only considered to be instruments of entrepreneurs and corporate profits are considered to be part of the shareholder's income. Therefore, an additional tax or a preferred treatment is not necessary.

In comparison to the classical system, the integration offers many advantages. With a full integration, there would be, in effect, no corporate income tax. Since the corporate tax is considered as a prepayment of the individual income tax, the taxation is neutral with respect to the choice of the legal form. This results in efficiency gains, since the capital will not leave the corporate sector due to a higher tax.<sup>205</sup> Furthermore, distinct rules like the hidden profit distribution become needless. However, in Germany there is still trade tax to consider, which requires maintaining those distinct rules. This setting shows clearly, how one distortion (trade tax) can have a multiplier effect on subsequent distortions.<sup>206</sup> Moreover, the tax burden of both dividends and interest will be the same. Broadway/Bruce list further that integration in contrast to a double taxation approach can eliminate the tax advantage of debt financing and self-financing through retained earnings. It further removes the incentive to remain unincorporated in order to avoid the double taxation. In addition, it removes for private corporations the incentive to distribute capital income as salaries.<sup>207</sup>

Nevertheless, the imputation system also raises new problems to deal with. Who should be entitled to use corporate losses? How should profit corrections be treated? The costs of changing all shareholder tax returns will unnecessarily reduce the efficiency gain.<sup>208</sup>

Furthermore, only a partial integration without a corporate tax will leave retained earnings untaxed. The taxation could be totally avoided by disapproving dividend distributions.<sup>209</sup> The government argued that Germany's old imputation system (1977-1999) was complicated, misusable and did not conform to European Law.<sup>210</sup> The old credit system violated the non-discrimination principle of the EU Common Market, because only shareholders residing in Germany were entitled to claim a credit for domestic corporate taxes. Also, German residents did not receive credit for corporate taxes paid abroad. Domestic households had an incentive to hold domestic equity

<sup>204</sup> Cf. *Tipke*, Die Steuerrechtsordnung 2, 730.

<sup>205</sup> Cf. *Musgrave/Musgrave/Kullmer*, Die öffentlichen Finanzen, 235.

<sup>206</sup> Cf. *Schneider*, Steuerlast und Steuerwirkung, 59.

<sup>207</sup> At the same time, the authors limit the arguments as valid mainly in a closed economy. In an open economy tax integration can achieve some neutrality regarding financial structure and the choice of the legal form, but "it does not achieve the savings and investment allocation that corresponds to a perfectly integrated income tax." *Boadway/Bruce*, Journal of Public Economics 1992, 39 (40 et seq., 61 et seq.).

<sup>208</sup> In regard to corporate losses the Canadian Tax Commission suggests leaving the losses at the corporate level to reduce earlier or later profits. The profit restatements must be assigned to shareholders in the year they are recognized. An excessive progression can be avoided by applying the tax rate that would be valid without the additional income. *Schneider*, Steuerlast und Steuerwirkung, 60.

<sup>209</sup> Cf. *Stiglitz*, Economics of the Public Sector, 674.

<sup>210</sup> However, many suggestions exist in the literature to avoid those problems. Cf. *Krebs*, Vereinfachung des Körperschaftsteuer-Anrechnungsverfahren, BB 1984, 1962 (1862 et seq.).

and thus the allocation of risk would be distorted, which in turn resulted in an overall reduction of welfare.<sup>211</sup> Therefore, the aforementioned neutrality with respect to the financial structure only applied in a domestic setting.

Further, if the corporate tax has the aim to finance part of the public services it would be undesirable to credit the tax against the personal income tax.<sup>212</sup>

Moreover, if the corporate tax can be shifted, the tax will change (like in the separation system) into a sales or wage tax. In this case, an imputation system would unjustifiably credit the sales or wage tax to the shareholder.<sup>213</sup>

## b) *Methods of Integration*

In the following section, integration models will be investigated, which attempt to overcome the aforementioned problems.

### **Full Integration**

#### ➤ *Participation Method*

The simplest method of integration would be a “passthrough” of all corporate earnings to shareholders.<sup>214</sup> This would also include retained funds. Thus, a later distribution of the retained earnings would be tax-free. If, for instance, the corporation earned 1000, the corporation would transfer 250 (25% corporate tax) to the government. The shareholder would pay tax on 1000 or his fraction of 1000. The corporate tax (in this understanding it is a withholding tax) of 250 or his fraction of it would be credited to the shareholder. If the shareholders tax rate is lower than the corporate tax rate, he will get a refund.

All in all, the shareholder will be treated for tax purposes similar to a partner in a partnership, in which profits will be credited to the “account” of each shareholder. The modification is that in the corporate setting, a withholding of the tax will take place.<sup>215</sup>

This method is heavily criticized because it might cause liquidity problems at the shareholders level, since it taxes not-received profits as well. However, large parts of the tax will be paid through withholding, and this will limit the liquidity problem.<sup>216</sup> The suggestion to finance the tax by selling some shares or to increase the dividend payments is not preferable. Both ideas change the capital allocation due to tax reasons and therefore effect efficiency. Another efficiency problem is that high costs result from attributing profits shares to each shareholder. Publicly traded corporations, with a high turnover of shareholders, are especially affected.

#### ➤ *Capital Gain Method*

The capital gain method taxes not only realized but also unrealized earnings. The distributed earnings will be taxed at the shareholders level as income from sec. 20 EStG and the retained earning will be taxed by the shareholder as capital gains. But

<sup>211</sup> Cf. *Fuest/Huber*, FinanzArchiv 2000, 514 (520).

<sup>212</sup> *Ibid.*, 517.

<sup>213</sup> Cf. *Musgrave/Musgrave/Kullmer*, Die öffentlichen Finanzen, 233.

<sup>214</sup> Cf. *Crane*, Corporate Taxation.

<sup>215</sup> Cf. *Stiglitz*, Finanzwissenschaft, 556.

<sup>216</sup> Cf. *Musgrave/Musgrave/Kullmer*, Die öffentlichen Finanzen, 230.

the liquidity problem does still exist. On the positive side, there is no corporate tax necessary. Since the withholding tax in the participation method can be shifted, the full taxation of all capital gains is preferred from an aggregated standpoint.<sup>217</sup>

### Partial Integration

To avoid the liquidity problems due to taxation of retained earnings on the shareholder's level, methods of partial integration were developed.

#### ➤ *Credit Method*

A popular partial integration method is the credit method or also referred to as imputation method, which is used in many countries like France, Great Britain, Australia, New Zealand or Canada.<sup>218</sup> Germany also used the credit method from 1977 to 1999. This system taxes corporate income with a corporate tax and allows a tax credit for (only) the distributed profits. The shareholder will calculate his income tax burden based on the portion of the distributed earnings and the portion of the withholding tax. The withholding tax can be credited against the calculated tax burden.<sup>219</sup>

Since distributed dividends are treated differently than retained profits, the system is inefficient in respect to capital usage. Furthermore, *Schneider* argues that the shareholder loses the tax credit on retained earnings.<sup>220</sup>

#### ➤ *Dividend Subtraction Method*

Similar to the credit method is the dividend subtraction method. This system also requires a corporate tax, but is only applicable to retained earnings. Dividends will be distributed without tax consequences at the corporate level. The responsibility of the correct declaration will be shifted to the shareholder; however, there is the risk of tax evasion.<sup>221</sup> This could be avoided by computer-based transfers of the corporation, which tell the government all dividend payments. From a cost and efficiency consideration this is favorable.<sup>222</sup> If the possibility of tax shifting will be considered, the dividend subtraction method will surpass the credit method, since this part of taxation is not visible at the corporate level. Therefore, less corporate tax gets shifted and credited to shareholders.

## VII. Summary

Germany uses a classical system of corporate taxation, precisely the so-called Half Income System. It taxes corporate profits at 25 % at the corporate level and grants shareholders a relief against domestic double taxation. Individual shareholders will include 50% of the dividend into their personal tax base, while dividends paid to corporate shareholders are tax exempted. Corporate taxation itself, as well as the configuration of the tax system, causes several distortions. This was one reason why there were always problems with justifying the corporate tax. Attempts included advantages with respect to limited liability, credit rating or capital accumulation. But under the classi-

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<sup>217</sup> *Ibid.*, 234.

<sup>218</sup> Cf. *Crane*, Corporate Taxation.

<sup>219</sup> Cf. *Musgrave/Musgrave/Kullmer*, Die öffentlichen Finanzen, 253.

<sup>220</sup> Cf. *Schneider*, Steuerlast und Steuerwirkung, 61.

<sup>221</sup> Cf. *Musgrave/Musgrave/Kullmer*, Die öffentlichen Finanzen, 253.

<sup>222</sup> Cf. *Stiglitz*, Finanzwissenschaft, 558.

cal system, the corporate tax should be justified by the more sound ability to pay principle, which measures the tax according to corporate profits.

It has been shown that the corporate tax will affect liquidity, risk, profitability and the decision possibilities of the corporations. Furthermore, depending on the competition in the market and the elasticity of demand and supply, the corporate tax might not be borne by corporate profits, but rather by consumers or workers. Moreover, if the corporate tax can be shifted to consumers, then corporate products will become relatively more expensive. This will result in substitution effects and cause welfare losses. This effect will be increased by the additional burden of the trade tax. Because of these distortions, the suggestion of imposing a lump sum tax or to finance public goods with fees instead of taxes, has been alternatively tested. It has been concluded that both suggestions have their specific practical limitations and therefore efficiency losses are at least partly inevitable.

The investigation then focused on specific rules in the tax code. It has been found that several rules unnecessarily cause inefficiencies. For instance sec. 8 (4) KStG might change the risk preference. Risky investments, which may possibly end up in a loss will be less likely chosen if the corporation is not permitted to transfer this loss into future years. Thus, resources might not flow into their best uses. For this reason it has been suggested to implement an unlimited loss offset.

Thereafter, the depreciation rules were examined. It has been concluded that the current rules subsidize long-term investment, because the faster depreciation, as the true economic depreciation, will lower the effective tax rate. This will also cause distortion between entire industries. However, this investment incentive does not exist if true economic depreciation is been used. But since well-developed markets for many goods do not exist, the true economic value is often not available. The second suggestion to avoid the distortions is more promising: The government will participate in the investment project by allowing a 100% deduction in the first year. In the next years, the government, which can be seen as partner, will profit by taxing higher returns. This suggestion will also avoid distortions due to inflation, since the depreciation takes place when the acquisition costs equal replacement costs.

It has also been investigated how taxation alters the incentives to modify the financial structure. The decision on whether an investor will decide for debt or equity is dependant on the investors tax rate. By applying *Miller's* findings to the German tax law, it has been concluded that debt is a cheaper source of capital than equity. The reason is that interest payments are 100% deductible for corporate tax and 50% deductible for the trade tax. Even though individual shareholders will have to tax interest payments fully while dividend income will only be included in half of the tax base, the deduction effect will overcompensate this disadvantage for debt at the shareholder's level. For corporate shareholders, the trade tax deduction will overcompensate for this advantage due to the tax exemption for dividends.

To achieve financing neutrality, it has been suggested to apply the Half Income System to all types of capital or to disallow the deduction of interest. For corporate shareholders the incentive to contribute debt would vanish, if simply 100% of interest would be added for trade tax purposes.

This investigation continues with a contemplation of distribution versus retaining. No distortions have been found for legal persons as shareholders, while individual

shareholders will have an incentive to retain profits. The additional taxation upon distribution causes the so-called “lock-in” effect. From a macroeconomic standpoint it will be inefficient, since capital allocation is changed due to tax rules. Corresponding to the “lock-in” effect of profits a “capital-gain-lock-in” effect has been found for individual shareholders, which are taxable upon share disposal due to a participation above 1% or disposal within a year. In this case, capital is hindered to flow into more productive investments. For the other individual shareholders as well as for corporate shareholders no distortion could be discovered.

The last section investigated the question, whether it would be beneficial to integrate the corporate tax into the individual tax. It was concluded that a integration would be desirable from an aggregated point of view. An integration could avoid many disadvantages of the classical system. For instance, it will be neutral with respect to the legal form or financing.

## D. Critical Reflections of the Economic Analysis of Law

The following will explain the manifold criticism of the economic analysis of law approach. The first section lists the arguments pertaining to the assumptions of the model. Thereafter, problems due to the use of the efficiency concept will be discussed. The chapter closes with arguments, which result from different understandings of the law and economic theory.

### I. Criticism of the Assumptions

The economic analysis of law is routed in the neoclassical model. Even though the law and economics approaches expanded the old theory, some assumptions remained unchanged. Those, however, offer starting points for criticism.

#### 1. Rationality

The rationality assumption is the most criticized one and many scholars<sup>223</sup> oppose to its premises. They argue that real people differ from the rational homo economicus.<sup>224</sup> While some scholars admit that the assumption is sometimes useful, others reject the neoclassical rationality assumption. *Posner* strongly protects the use of such simplifying hypothesis. He argues that the economic analysis of law cannot capture the full complexity of reality. Such an intent would be a description and not a theory.<sup>225</sup> Among the like-minded scholars the analogy of a road map became very

<sup>223</sup> See for example *Krecke*, *The Nihilism of the Economic Analysis of Law*, 8.

<sup>224</sup> An excellent description of decision traps is given by *Hammond/Kennedy/Raiffa*, *Hidden Traps in Decision Making*, Harvard Business Review 1998, Reprint Number 98505.

<sup>225</sup> Friedman justifies the use of the assumption by the argument that it does not matter whether the assumption accurately describes the behavior of decision makers, as long it is a useful tool to predict the behavior. *Friedman*, *The Economics of Everyday Life*, 4 et seq.

popular. The argument is that an all including theory is as useful as a map of scale 1:1.<sup>226</sup>

The discussion can be discharged by rethinking that most of the literature erroneously focuses on the monetary effects of rationality. Since individuals have manifold needs to be satisfied, an irrational behavior from a monetary point of view can still be rational if one bears in mind all needs.<sup>227</sup> Take for instance a buyer of ubiquitous goods in a “third world store”. Since he could buy the same product next door for less financial resources, from a monetary standpoint that behavior would be classified as irrational. But considering the increased happiness of the buyer to help indigent people, it can be seen that those people do nothing else than rationally pursue their desires.<sup>228</sup>

However, in the literature, advanced approaches can be found, which combine rational choice theory with the coherent insight of human fallibility.<sup>229</sup>

How plausible is the rationality assumption for the investigation of corporate tax law? Do the players (investors, managers, politicians) behave rationally? As *Auerbach* concludes, this question needs to be answered by empirical investigation.<sup>230</sup> The research directions of behavioral finance, principal agent approach and public choices do research in this area.

Investors, who are creditors as well as shareholders, act on capital markets. Their decisions are dependent on economic ratios, such as profitability. But there are also arguments that investors are subject to psychological traps. Consider for instance the status quo trap. It has been found that shareholders do not necessarily restructure their portfolio when superior opportunities arise. Creditors, on the other hand, might be trapped into sunk costs. For instance, bankers might advance more loans to troubled companies, even if the money could be assigned at a lower risk somewhere else. The reason for the bankers is simply the attempt to protect their earlier, flawed decision.<sup>231</sup> But while those traps occur in reality, most market participants can counteract them by instituting policies, goals or information systems.<sup>232</sup> Therefore, for most analyses the use of the neoclassical rationality assumption will be sufficient. Only by investigating private shareholders or creditors, will it be advantageous to use advanced approaches, which consider other determinants as well.

<sup>226</sup> Cf. for instance *Ott/Schäfer*, JZ 1988, 213 (219).

<sup>227</sup> Therefore the concept of utility outperforms pure monetary consideration. Similar: *Schmidtchen*, Homo oeconomicus und das Recht, in: Aaken/Schmidt-Lübbert (eds.), German Working Papers in Law and Economics, 7. Other measures of welfare could be ophelimity, opulence or capabilities. Cf. *Aaken*, Normative Grundlagen der ökonomischen Theorie des Rechts, in: Aaken/Schmidt-Lübbert (eds.), Beiträge zur Ökonomischen Analyse, 5 (9 et seq.), *Ramb/Tietzel*, Ökonomische Verhaltenstheorie, VI.

<sup>228</sup> Other alternatives like a trip to those countries to bring the money personally will not be an option, because the costs are higher for same goal (minimal principle).

<sup>229</sup> Confer for instance *Schmidtchen*, Homo oeconomicus und das Recht, in: Aaken/Schmidt-Lübbert (eds.), German Working Papers in Law and Economics, or *Jolls/Sunstein/Thaler*, Stanford Law Review 1998, 1471.

<sup>230</sup> Cf. *Auerbach/Feldstein*, Handbook of Public Economics, in: Arrow/Intriligator (eds.), Handbooks in Economics 4 (2002), 1761.

<sup>231</sup> Cf. *Hammond/Kenney/Raiffa*, Hidden Traps in Decision Making, Harvard Business Review 1998, Reprint Number 98505, 5 et seq.

<sup>232</sup> For instance loans could get reassigned to another banker as soon as problems arise.

A similar result applies to corporations. Corporations act only through persons. Because managers run into the risk of psychological traps as well, most corporations implement control systems. The institution of the Supervisory Board and the internal control systems are even required by law.<sup>233</sup> Thus, the rationality assumption will approximate the manager's behavior well enough.

The government acts through politicians. But unlike the other cases, the assumption that politicians will exclusively act according to their appointments, will often lead to erroneous results. The reason is this is that it has been found that politicians e.g. consider in general a short time frame, maximizing their political power and reacting to lobby groups. Therefore, the rationality assumption for the government should only be used in a modified form.<sup>234</sup>

## 2. *Competition Paradigm*

The full competition model is often used as a reference theory. In a competitive market, resources will automatically shift to their most valuable use. But *Polinsky* indicates that the imitation of a competitive market will not always improve efficiency.<sup>235</sup> For instance, if the goal is to produce public goods, the imitation of a competitive market would be a mistake. Due to high costs to restrain other users, the public goods would, in the end, remain not produced.

This not only fails the assumption of no transaction costs, but also the assumption of no reallocation costs. The redistribution may distort prices and therefore impose efficiency losses. The loss of efficiency therefore represents the reallocation cost.<sup>236</sup> Closely related to the reallocation cost is the question, how of can the reallocation cost can be measured in the imbalance state.<sup>237</sup> The economic analysis uses predominantly opportunity cost. But since opportunity cost can only clearly be measured in an economic equilibrium the analysis becomes erroneous. For this reason *Schmidtchen* suggests the use of the subjective cost term.<sup>238</sup>

Furthermore, the theory presumes that the preferences of individuals are convex. This assumption is unrealistic since individuals may just walk away if they are subject to negative externalities. Corporations, for instance, might just move their business to low tax countries. Their welfare might increase by doing so, but then their preferences will be not convex anymore. Thus, a market solution becomes impossible.<sup>239</sup>

All in all, the critique on the competition paradigm shows that, for the full competition market derived solutions may differ in a real world context. Since the mar-

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<sup>233</sup> Sec. 30 (1) AktG and sec. 91 (2) AktG.

<sup>234</sup> Those models are associated with the public choice school.

<sup>235</sup> Cf. *Polinsky*, Economic Analysis as a Potentially Defective Product, translated in: Assmann/Kirchner/Schanze (eds.), *Ökonomische Analyse des Rechts*, 99 (110 et seq.).

<sup>236</sup> *Ibid.*, 123 et seq.

<sup>237</sup> Cf. *Koboldt/Leder/Schmidtchen*, *Analyse des Recht*, 1995, in: Berthold (ed.), *Allgemeine Wirtschaftstheorie*, 355 (379 et seq.).

<sup>238</sup> *Ibid.*, 379 et seq.

<sup>239</sup> Cf. *Polinsky*, Economic Analysis as a Potentially Defective Product, translated in: Assmann/Kirchner/Schanze (eds.), *Ökonomische Analyse des Rechts*, 99 (120 et seq.).

kets, which are regulated by corporate tax law, are more or less perfect, adjustments in the rules that set incentives become necessary.

### 3. *Selection of Alternatives*

Economic acting means to choose alternatives in a world of scarce resources. The assumption is that individuals will decide according to their own will power, self-interest and use all information available. Especially the information premise is challenged in the literature.<sup>240</sup> This is a valid criticism, since it is unlikely that all necessary data will be available to the decision makers. And even if all information is accessible, the cognitive capacities of the human being will be transcended. Therefore, in complex decisions-models, assumption about limited information, bounded willpower and bounded self-interest are essential.

These complex decision-models will almost be necessary if the economic analysis of law is applied to the field of corporate tax law. But since the tax codes are available to everyone, and it can be assumed that they are known by all parties, the limited information must be located somewhere else. The limitation occurs in the manifold interpretation of the tax code sections by the taxpayer, government and judges. For instance, the question of which expenses are covered by sec. 4 (4) EStG, is a major source of uncertainty. The result of this uncertainty is that efficiency might not be achieved, because on one hand, inefficient situations might be accepted and not be challenged before a court. On the other hand, efficient solutions might be altered into inefficient solutions by judges due to their own limited information or if the situation remains unchanged, economic resources will be spent unnecessarily.

## II. Criticism of the Efficiency Concept

A lot of criticism is connected to the concept of efficiency. In the following the most common arguments will be investigated.

### 1. *Efficiency as the Onliest Dimension*

Many scholars note that the allocation-efficiency is used alone to judge social utility.<sup>241</sup> This contemplation becomes one-dimensional. Other theories of justice like redistribution will not be considered. In *Auerbachs* opinion, there is no “good reason [...] to employ legal rules to accomplish redistributive objectives given the general alternative of achieving sought-after redistribution through the income tax and transfer programs.” Nevertheless, it can be agreed with *Ott/Schäfer*, who think that this theory is a theory of justice, because a predominantly inefficient society is, in any case un-

<sup>240</sup> Cf. *Koboldt/Leder/Schmidtchen*, *Analyse des Recht*, in: Berthold (ed.), *Allgemeine Wirtschaftstheorie*, 355 (380).

<sup>241</sup> Cf. *Aaken/Schmidt-Lübbert*, *Beiträge zur Ökonomischen Analyse*, 3, *Fehr/Wiegand*, *Effizienzorientierte Steuerreformen*, in: Krause-Junk (ed.), *Steuersysteme der Zukunft*, 199 (199 et seq.), *Fezer*, *JZ* 1988, 223 (224, 226).



fair.<sup>242</sup> *Posner* derives a similar realization by distinguishing between two different meanings of justice: First, distributive justice that aims toward equality and second, efficiency.<sup>243</sup>

*Mackaay* criticizes that the efficiency thesis is circular, since for any distribution, an efficient allocation of resources can be found.<sup>244</sup>

But law does not need to be evaluated by efficiency only. It could be judged in principle according to any operational criterion.<sup>245</sup>

The literature developed, for instance, the protection of unimpeachable, personal rights, the limitation of economic power, and the reduction of discrimination, democratization or mutual consensus.<sup>246</sup>

By applying the economic and law approach to corporate tax law, it is important to recognize that the analysis is focusing exclusively on efficiency. But also a fair distribution might be seen as important. Further, potential changes in corporate tax law that increase efficiency, are limited by the constitutional rules as well as the rules of the European Union. This one-dimensional approach of the Chicago school is already questioned by growing influence from the New Haven school. This approach regards distributional consideration as important as allocation efficiency and it considers unalienable rights as well.

However, keeping in mind the limitation of the economic analysis of law it can provide useful partial analyses.

## 2. *Efficiency as the Highest Value*

The importance of the efficiency contemplation increased significantly in the last two centuries. While the classical economists favored the normative-ethical principle of equality, today's scholars rank efficiency first. Often, equality is only to be found as a last resort, as portrayed in figure D-1. *Tipke* thinks that the last place for fairness consideration is inappropriate.<sup>247</sup>

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<sup>242</sup> Cf. *Ott/Schäfer*, JZ 1988, 213 (221).

<sup>243</sup> Cf. *Posner*, Economic Approach to Law, in: *Posner*, Economic Structure of the Law, 57.

<sup>244</sup> Cf. *Mackaay*, History of Law and Economics, 77 et seq.

<sup>245</sup> According to Hayek, it is not clear what the original purpose of the law was, because law emerges as the result of human action, not human design. Cf. *Hayek*, Verfassung der Freiheit, 178 et seq.

<sup>246</sup> See as an example *Aaken/Schmidt-Lübbert*, Beiträge zur Ökonomischen Analyse, 31. Buchanan, for instance, considers legal-institutional constraints along with resource constraints. Whether or not resources flow to their most highly valued uses depends on the institutional setting, which itself is subject to change. According to Buchanan, the test for an institutional reform should be consensus among the affected parties. Cf. *Buchanan*, Irrelevance of Transactions Cost, in: Neumann (ed.), Ansprüche, Eigentums- und Verfügungsrechte, 9 (22 et seq.).

<sup>247</sup> Cf. *Tipke*, Die Steuerrechtsordnung 2, 543.

Two examples of tax fundamentals	
<p><b>Panel A</b><sup>248</sup></p> <ol style="list-style-type: none"> <li>1. <i>Equality</i></li> <li>2. Definiteness of Tax Law</li> <li>3. Forbiddance of Excess taxation</li> <li>4. <b>Efficiency</b> and Neutrality</li> <li>5. Practicability and simplicity</li> </ol>	<p><b>Panel B</b><sup>249</sup></p> <ol style="list-style-type: none"> <li>1. <b>Efficiency</b></li> <li>2. Administrative simplicity</li> <li>3. Flexibility</li> <li>4. Political responsiveness</li> <li>5. <i>Equality</i></li> </ol>

Figure D-1: Tax Fundamentals. Own illustration.

Nowadays, the primary focus on efficiency sometimes takes bizarre reproaches. *Posner* for instance argued that judges should do what they have sworn only to the extent that will maximize social goods.<sup>248</sup> But this was heavily criticized by *Rubinfeld*, who argued that this would harm the judicial duty of the American constitution and be subject to perjury.<sup>249</sup>

Corporate tax law also follows the different tax fundamentals. The question is whether the efficiency concept should be considered as the most important. It is suggested that the efficiency concept can be weighted highest, because a corporate tax rule, which would achieve other fundamentals like simplicity or practicability, cannot be justified. Beyond any question the equality consideration is also an important fundamental, but an inefficient corporate tax law cannot be considered as fair either. By keeping in mind that other fundamentals exist too, the economic analysis of corporate tax law can contribute helpful insights for the jurisprudence.

### 3. *Efficiency as Insufficient Condition*

*Calabresi* argues that a dynamical interpretation of the results of the comparative static is incorrect.<sup>250</sup> An improvement in efficiency is a necessary, but not a sufficient condition to shift to a new state. This results due to the existence of transaction costs. Only if there are no transaction costs, an unquestionable shift will take place.<sup>251</sup> Therefore, he argues that given any transaction costs, the society will always exist within in a Pareto-efficient situation.

The problem of the Pareto-criterion is long known. Hence, it can be regarded as favorable to apply the Kaldor-Hicks criterion and to explicitly consider transaction and reallocation costs. In this understanding, an efficiency improvement exists only if the efficiency gain of a change can cover all transaction and reallocation costs plus compensate the disadvantaged persons.

<sup>248</sup> Cf. *Posner*, Stanford Law Review 2002, 739 et seq. For *Posner*, in a world of scarcity, the worst injustice is the waste of resources, *Posner*, Economic Analysis of Law, 27.

<sup>249</sup> Cf. *Rubinfeld*, Stanford Law Review 2002, 767.

<sup>250</sup> Cf. *Calabresi*, The Yale Law Journal 1991, 1211 (1212, 1218 et seq.).

<sup>251</sup> This assumption is unbearable if the restructures in the new federal states of Germany will be considered. The assumption is rooted in the idea of an equilibrium in that not even the existence of enterprises is necessary. Cf. *Elschen*, Ökonomische Analyse des Steuerrechts, in: Schanz (ed.), Betriebswirtschaftslehre und Nationalökonomie, 267 (286).

This means that the decision of whether or not a corporate tax rule should be changed must depend on the amount of welfare gain (for instance the higher utility of lower tax payments) in comparison to the losses of the other party (for instance the reduced tax revenue) and the transaction costs. If a change in a tax rule will benefit a party more than the cost to pay the transaction cost and to compensate the other, the efficiency would improve. Even without a real compensation the change will be chosen by all parties, because as shown in section B.5.2.2 (in the long run) everyone will be better off. Therefore, this argument cannot refute the economic and law approach as long as the Kaldor-Hicks criterion will be used.

#### 4. *Efficiency as Static Contemplation*

The last section already mentioned the problem of the static of efficiency. Hereunto the further criticism exists that once an alternative is chosen, there is no reason to move away from it. Nevertheless, it is argued that even in the absence of new options the law tends to evolve over time. An old solution might no longer seem suitable.<sup>252</sup>

This argument presumes that there is only one efficient solution. But take, for instance, a corporate tax rule, which was efficient a few years ago. This rule might be inefficient today, because preferences might have been altered. Thus, depending on the transaction cost, the change of that rule might increase efficiency.

It is true that this often-overlooked problem exists, but it can be not agreed to the demand that the economic analysis of law should explain those changes.<sup>253</sup> Rather, it would be advantageous to inspect regular the efficiency gains, transaction and reallocation costs and implement the changes, which will result in a net-efficiency gain.

#### 5. *Efficiency as Subjective Value*

Austrian scholars raised concerns about the subjectivity of the efficiency concept.<sup>254</sup> The determination of the social optimum requires the parties to put the gains of the winner and the losses of the losers on one scale to make them comparable.

A monetary scale would be easy to handle but results in an erroneous conclusion. Measuring gains and losses on a utility scale is much more accurate. Unfortunately, this scale is better practiced in theory than in reality. For instance it might be practically impossible to calculate the utility of the societal gains due to increased beneficial transactions of the tax-exempted institutions of sec. 5 (1) KStG. In law-suits satisfactory solutions can be achieved by skillful question-techniques from judges in order to gain an understanding of the “hidden values”.

This argument says that the economic analysis of law has practical limitations. But this does not mean it is useless as a theoretical concept. To the contrary, the economic and law approach can develop solutions, which in turn can be applied as heuristics in the real world.

<sup>252</sup> Cf. *Mackaay*, History of Law and Economics, 78.

<sup>253</sup> This is rather the subject of sociology, philosophy and law.

<sup>254</sup> Cf. *Veljanovski*, New Law-and-Economics, 97, quoted from: *Mackaay*, History of Law and Economics, 78 et seq.

## 6. *Efficiency Requires no Compensation*

*Auerbach* notes correctly that the measure of efficiency, by applying the Kaldor-Hicks criterion, puts the single focus on the effects of the legal rules on human behavior.<sup>255</sup> *Sen* considers the compensation criterion both unconvincing and redundant, because first, compensation is not to be paid and second, if compensation takes place then the overall outcome would be a Pareto improvement and no compensation test would be needed as a supplement to the Pareto principle.<sup>256</sup>

However, an argument can be made to consider the use of compensation as well. Without compensation, efficiency improvements might have unilateral allocation impacts (in the form of a widening of distance between the rich and poor members of the society). In the long run a possible social dissatisfaction might unload in a very inefficient way. Even by not thinking the worst, it remains to investigate, if not single short-term compensations would be more efficient instead of having the risk of paying social welfare for a long period.<sup>257</sup>

In general this problem should not be overstated. Small disadvantages will be still accepted as long as randomly all parties will be affected. Again, in the long-run everyone will be better off.

In the corporate tax context, the particular question remains: Who should be compensated? As already concluded, corporations might be able to shift the tax burden to consumers or workers. Thus, a consideration of compensation requires a thoroughly analysis of all parties affected.

## III. Criticism due to Different Understandings of the Theory

Next to criticism about the assumptions and the efficiency concept, further arguments can be made. Those are summarized as opinions pertaining the perception of the economic analysis of law.

### 1. *Universal Utilization*

*Fezer* strongly argues that the planning of law, according to economic principles is misleading.<sup>258</sup> He cast a stone at the theory. The goal is not only to explain all areas of life but also to regularize them. Other scholars agree on a weaker perception. *Ott/Schäfer*, for instance, warned that a quick euphoria like *Posner's* standpoint would contradict *Fezer's* "all-regularize" argument.<sup>259</sup> They agreed that the economic analysis

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<sup>255</sup> *Auerbach/Feldstein*, Handbook of Public Economics, in: Arrow/Intriligator (eds.), Handbooks in Economics 4 (2002), 1761.

<sup>256</sup> Cf. *Sen*, Ethics and Economics, 33, supra note 4.

<sup>257</sup> This is because of a possible decrease in motivation to work due to repeated discrimination without compensation. From an inter-temporal tax standpoint, it could happen that the increased tax yield of the winners cannot compensate the tax losses of the loser (Who might be now within the existence minimum and not be taxed anymore).

<sup>258</sup> Cf. *Fezer*, JZ 1986, 817 (824).

<sup>259</sup> Cf. *Ott/Schäfer*, JZ 1988, 213 (215).

does not question the validity of law. This theory will only inspect (alternative) rules under efficiency considerations.

*Ott/Schäfer* distinguishes between the legitimacy of law and legitimacy. Only the latter point is the subject of the economic analysis of law.

Incompatibilities with other tasks of the law are in the center of criticism as well. In conflict with high-order law-goods *Ott/Schäfer* admitted that efficiency losses may be accepted.<sup>260</sup> But presumably, conflicts often not exist. For instance, the goal of the law to limit market power is also covered by efficiency considerations, since market power means incorrect prices, which in turn distorts produced quantities and therefore reduces efficiency.

Moreover, a discussion exists around the question of, which areas of law the economic analysis can be applied. Against initial resistance, *Posner's* opinion<sup>261</sup> seems to prevail in the literature. Many areas of law are not solvable without this instrument anymore.<sup>262</sup>

The goal of this study is to show the application of the economic analysis on corporate tax law. The illustrated investigations showed that the corporate tax act itself as well as its specific rules sometimes affects efficiency. Consequentially, the economic analysis of tax law is a necessary instrument to identify causes of efficiency losses.

## 2. *Impact of the Theory*

Also discussed is the question of how incentives can really navigate human behavior as the economic analysis predicts. Under the assumptions of the model clear prognoses will be possible. Thus, this criticism points toward the reality of those assumptions.<sup>263</sup>

In the context of the tax law those limitations apply as well. But as already argued, for most analyses the use of the assumptions will be sufficient. Only in cases where the additional information gain can make up for the additional complexity, more detailed assumptions should be used.

## 3. *Value-freedom*

Occasionally, arguments can be found that criticize the departure from the non-normative science. From the beginning, many law and economic scholars refused to formulate value judgments in their analyses.<sup>264</sup>

But the comparison of the positive law with a normative standard makes evaluation necessary. Furthermore, evaluations become essential where law explicitly or implicitly indicates or instructs them.<sup>265</sup>

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<sup>260</sup> *Ibid.*, 219 et seq.

<sup>261</sup> Cf. *Posner*, Economic Analysis of Law, Preface.

<sup>262</sup> For instance Antitrust Law or Insider Trading. Cf. *Burrow*, JuS 1993, 8 (11).

<sup>263</sup> See also the elaborations in section B.IV.2.

<sup>264</sup> Cf. *Krecke*, The Nihilism of the Economic Analysis of Law, 6.

<sup>265</sup> Cf. *Ott/Schäfer*, JZ 1988, 213 (214).

The starting point of this study is the value judgment that inefficiencies through corporate taxation rules have to be avoided. However, this value judgment is weak, since it can be assumed that the minimization of waste is an agreeable goal. The Pareto principle was rejected as a measure, because it is ascribed to the first distribution that is often not changeable without harming anyone. Instead, this study used the Kaldor-Hicks principle to measure efficiency.

#### 4. *Complicationism*

*Posner*, among others, criticizes the increasing complexity of the models.<sup>266</sup> He argues that models became so rich that no empirical observation can refute or support it. He does not tolerate the free adding of assumptions. Rather, he on two factors: first, on the theory's ability to explain reality, and second, on its predictive power.

We live in a complex, industrialized society and the law, including the tax law, has to mirror this fact. Simple rules like the tribes in the tropical forest, would not suit the manifold needs of our society. Therefore, the economic analysis of tax law needs to deal with complicated models. However, every complex assumption needs to justify itself through a resulting quality improvement. This will ensure that simple problems can be solved with simple models, while more complex situations will only result in usable solutions when comprehensive extensions are used.

#### 5. *Wrong Utilization*

Also criticized is the concern that the economic analysis might be incorrectly applied. *Posner* notes that there are opinions, which indicate that no economic theory is widely accepted.<sup>267</sup> Those scholars argue that this "imperfect" instrument should not be used. This argument is rejected, since the alternative would be a state of no theory. This study has shown that the economic analysis of tax law can reveal sources of inefficiency. Thus, the economic analysis is a useful tool with achievements that should not be underestimated.

However, an agreeable argument expresses *Polinsky*, who emphasizes that the economic analysis must be utilized correctly.<sup>268</sup> The simplifying assumptions, the different meanings of efficiency, as well as the characteristics of the corporate sector require a sound understanding before useable results can be derived.

### E. Conclusion

The economic analysis of law is an interdisciplinary approach to predicting the consequences of rules. Starting from a microeconomic analysis it will investigate the

<sup>266</sup> Cf. *Posner*, *Economic Analysis of Law*, 17; *Mikhaíl*, *Stanford Law Review* 2002, 1055 (1125); *Schmidtchen*, *Neuland für die ökonomische Analyse des Rechts*, in: Ott/Schäfer (eds.), *Ökonomische Probleme des Zivilrechts*, 316 (316 et seq.).

<sup>267</sup> Cf. *Posner*, *Economic Approach to Law*, in: *Posner* (ed.), *Economic Structure of the Law*, 52.

<sup>268</sup> Cf. *Polinsky*, *Economic Analysis as a Potentially Defective Product*, translated in: *Assmann/Kirchner/Schanze* (eds.), *Ökonomische Analyse des Rechts*, 99 (127 et seq.).

impact of individual incentives on aggregated efficiency. The goal is to find incentive structures that will result in an increased utility for the entire society.

The economic analysis of law is applied in several areas of law. This investigation concludes that the economic analysis of law can also be applied to the field of tax law. It has elaborated the basic characteristics of the instrument and applied it to income taxes in the corporate sector. It has been found that the corporate tax itself as well as the special provisions that are applicable in the corporate setting, cause inefficiencies.

Furthermore, the most often expressed reservations with regards to the economic analysis of tax laws are investigated. The critiques centralize around the assumptions, the efficiency concept and the understanding of the economic and law approach. Even though most arguments could be invalidated, it must be noted that the economic analysis of tax law will only then generate useable results if:

- The assumptions will be adjusted according to the need of the investigated problems
- The efficiency concept is seen as just one judgment of social utility.

If these conditions are met, then, the economic analysis of tax law can provide a noticeably helpful partial analysis.

Its empirical application will, at least on a worldwide scale, be restricted, since it is unlikely that countries with high expenditures will apply the efficiency concept. As a result they will be unable to cover their expenditures because foreigners use their public goods but will be tax exempted.<sup>269</sup>

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<sup>269</sup> Cf. *Thiede*, *Ökonomische Analyse der Körperschaftsbesteuerung*, 26 et seq.

## APPENDIX

Appendix 1: Present Values of Different Depreciation Methods (full table)

		Year	Year	Year	Year	Year	Year	Year	Year	Sum	
		1	2	3	4	5	6	7	8		
<b>True economic depreciation</b>	<b>Revenue</b>	17	17	17	17	17	17	17	17		
	<b>- Depreciation</b>	9	10	11	12	13	14	15	17	100	
	<b>Net revenue</b>	8	7	6	5	4	3	2	0		
	<b>- Corporate Tax (25%)</b>	-2	-2	-2	-1	-1	-1	0	0	-9	
	<b>After Tax Income</b>	15	15	15	16	16	16	17	17		
	<b>Pre tax present value</b>	17	15	14	13	12	11	10	9	100	
	<b>After tax present value</b>	15	14	13	13	12	11	11	10	100	
	<b>Present value of depreciation</b>	9	9	9	9	9	9	9	9	70	
	<hr/>										
	<b>Straight-line depreciation</b>	<b>Revenue</b>	17	17	17	17	17	17	17	17	
<b>- Depreciation</b>		12	12	12	12	12	12	12	12	100	
<b>Net revenue</b>		5	5	5	5	5	5	5	5		
<b>- Corporate Tax (25%)</b>		-1	-1	-1	-1	-1	-1	-1	-1	-9	
<b>After Tax Income</b>		16	16	16	16	16	16	16	16		
<b>Pre tax present value</b>		17	15	14	13	12	11	10	9	100	
<b>After tax present value</b>		16	15	14	13	12	11	10	10	100	
<b>Present value of depreciation</b>		12	11	10	9	9	8	7	6	73	
<hr/>											
<b>Accelerated depreciation (Maximum of 20% or double of straight line)</b>		<b>Revenue</b>	17	17	17	17	17	17	17	17	
	<b>- Depreciation</b>	20	16	13	10	10	10	10	10	100	
	<b>Net revenue</b>	-3	1	4	7	7	7	7	7		
	<b>- Corporate Tax (25%)</b>	1	0	-1	-2	-2	-2	-2	-2	-9	
	<b>After Tax Income</b>	18	17	16	15	15	15	15	15		
	<b>Pre tax present value</b>	17	15	14	13	12	11	10	9	100	
	<b>After tax present value</b>	18	16	14	12	11	11	10	9	101	
	<b>Present value of depreciation</b>	20	15	11	8	7	6	6	5	77	
	<hr/>										
	<b>Special depreciation (1st year: 50% 2nd year: 25% 3rd year: 25%)</b>	<b>Revenue</b>	17	17	17	17	17	17	17	17	
<b>- Depreciation</b>		50	25	25	0	0	0	0	0	100	
<b>Net revenue</b>		-33	-8	-8	17	17	17	17	17		
<b>- Corporate Tax (25%)</b>		8	2	2	-4	-4	-4	-4	-4	-9	
<b>After Tax Income</b>		25	19	19	13	13	13	13	13		
<b>Pre tax present value</b>		17	15	14	13	12	11	10	9	100	
<b>After tax present value</b>		25	18	16	10	10	9	8	8	104	
<b>Present value of depreciation</b>		50	23	21	0	0	0	0	0	93	





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