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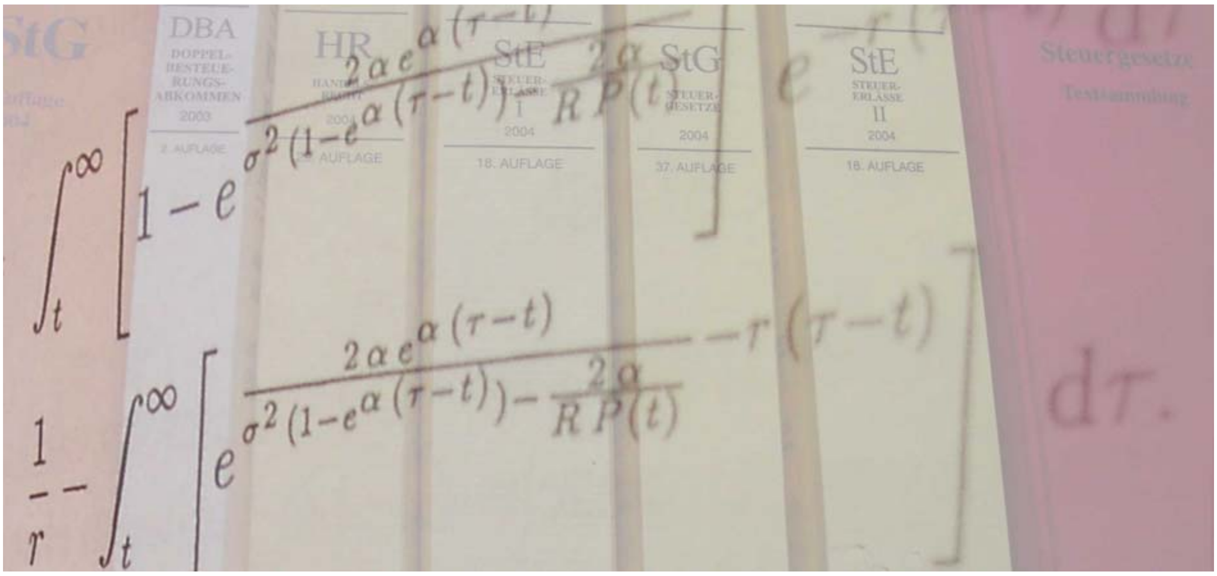

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Inheritance tax-exempt transfer of German businesses: Imperative or unjustified subsidy? – An empirical analysis

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Abstract

This contribution addresses the substantial tax subsidies for businesses introduced by the German Inheritance Tax Act 2009. Advocates in favour of the vast or even entire tax exemption for businesses stress the potential damage of the inheritance tax on businesses, as those often lack liquid assets to meet tax liability. This submission tackles this issue empirically based on data of the German Inheritance Tax Statistics and the SOEP. The results indicate that former German inheritance tax law has not endangered transferred businesses. Hence, there is no need for the tremendous tax privilege for businesses in current German inheritance tax law. A virtual uniformed inheritance tax without tax privileges, which meets revenue neutrality per tax class according to current tax law, provokes in some cases relative high tax loads which might trouble businesses.

Inheritance tax-exempt transfer of German businesses: Imperative or unjustified subsidy? – An empirical analyses

1 Introduction

The German Inheritance Tax Reform Act 2009 has been provoked by the jurisdiction of the Federal Constitutional Court. The court found fault with the erratic results of the valuation procedures for businesses and real estate in previous German inheritance taxation and the resulting unequal taxation.[1] However, a privileged taxation of distinct asset categories is according to the Federal Constitutional Court acceptable if this is in general public interest. But a preferential treatment must not take place in tax valuation procedures. Therefore all asset categories are supposed to be assessed by market values by new designed valuation procedures.

Nucleus of the new German inheritance tax is a vast or even an entire tax exemption for transferred businesses which is justified by job protection. In addition, the German government stresses the importance of small-scale companies for economic growth and employment in Germany. The rationale for a preferred taxation of businesses is possible liquidity problems caused by the inheritance tax. These complaints about the negative effects on passing businesses onto children or other relatives due to restraints in entrepreneurial liquidity are not a specific German feature. This issue provokes controversial discussions in other countries, e.g. the USA, although, similar to Germany, contribution of inheritance tax to internal revenue is finite.[2] Not surprisingly, especially owner of family businesses indicate that the inheritance tax would make survival of their business more difficult if not impossible.[3]

Objective of this contribution is to figure out if the tax privilege in favour of businesses in current German inheritance tax law can be justified. As neither a negative effect nor the irrelevance of the inheritance tax on the passing of businesses to heirs or donees can be proofed theoretically, we approach this topic empirically. For that purpose we quantify the inheritance tax burden of transferred businesses empirically by exploiting data of the latest inheritance tax statistics of the Federal Statistical Office Germany. We calculate both the tax burden in case of former German inheritance tax law and the tax burden in case of a virtual inheritance tax without any tax privileges and lower tax rates. Simultaneously we examine the environment in which transfer of businesses takes place. In this context we assess to what extent transferees of (family) businesses are able to cover their inheritance tax liability by any but business assets. At least, this enables us to make a rough estimate if the inheritance tax

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[1] See BVerfG v. 7.11.2006, 1 BvL 10/02: recital 136.

[2] In Germany the inheritance tax contributes in 2007 only 0.8% to entire tax revenue (see Sachverständigenrat (2008/2009): recital 369). Sureth et. al. (2008): 187 f., provide a survey of absolute and relative inheritance tax revenues for several countries.

[3] See for example Holtz-Eakin/Phillips/Rosen (2001): 52. In a survey of 2,500 family businesses by Travis Research Association (1995) most of family business owners agreed with this view (see Travis Research Associates (1995): 3).

causes really the stated negative effects on family businesses and, subsequently, if a tax privilege in favour of businesses can be justified.

The remainder of this paper is organised as follows: Section 2 gives a review of the literature with particular respect to previous empirical findings. Section 3 highlights the former and current taxation of transferred businesses in German inheritance tax law. In Section 4 we discuss pros and cons of a tax privilege in favour of businesses, in Section 5 we present our empirical findings and in Section 6 we result in the conclusion.

2 Literature survey

The appraisal of tax privileges in favour of business property provided by the German Inheritance Tax Act 2009 in literature is ambiguous. Some authors support basically a tax exemption for businesses following the argument of the German Government that paying inheritance tax could endanger enterprises and with them jobs (Alt/Barbaro (2007); Lang (2008)). Other authors disagree about the tax privilege in favour of businesses by stressing in particular fairness aspects, the possibility of employing capital markets and the feasibility of a tax deferral provision (Hey (2007); Maiterth/Niemann et. al. (2006); Sachverständigenrat (2005/2006) and (2008/2009); Seer (2009); Viskorf (2008)). Unfortunately all contributions rely solely on theoretical considerations without an empirical basis. Hence, the results depend to a large extent on assumptions concerning the efficiency of capital markets.

However, international literature provides some empirical results with regard to liquidity problems bequeathed businesses can face to meet the inheritance tax liability.

Harriss (1949) tackles problems such as timing or matching problems, which may occur, when assets of a business have to be sold to meet the US estate tax liability[4]. The findings based on data from Statistics of Income for estates filed in 1942-1944 show for the great mass of taxable estates no difficulties in transforming assets into cash to pay the estate tax. But, for a small number of extremely valuable estates (these cover 47% of total tax revenue) liquid assets fail to balance the estate tax liability.

Astrachan/Tutterow (1996) deal with the question whether and how the US estate tax affects business behaviour by a telephone poll of 1,003 businesses where nearly 80% were family businesses. The results of the survey suggest that estate taxes cause business owners to alter the management of their enterprises in ways that depress economic activity. The entrepreneurs stated to invest less and create fewer jobs than they would if they did not face the prospect of estate taxes. With regard to a transfer of their business, 66% of the respondents claim threats to business survival and 8% presume the death of their business.

Holtz-Eakin (1999) analyses behavioural response to the estate tax. Based on data collected in a mail survey sent to businesses in upstate NY his econometrical results show a considerable negative relationship between the number of jobs created in the past five years and future estate tax liability. Holtz-Eakin concludes “that the estate tax is shifted-forward in time to the business operation and onto the production factors capital and labour”.

4 In the United States there is an estate tax instead of an inheritance tax.

Holtz-Eakin/Phillips/Rosen (2001) examine whether and how people use life insurance to hedge US estate tax and avoid liquidity problems. Their findings rely on a pooled database of two nationally representative samples of older persons for a specific year (HRS and AHEAD). There findings suggest that owners of businesses buy more insurance than other individuals do, but, even together with other liquid assets, they can not balance estate tax liability.

Brunetti (2006) estimates if, and to what extent, the US estate tax forces sales of family business and farm. His econometric analysis is based on the probate records of the San Francisco County Superior Court from 1980 to 1982, which include 312 estates that contain business or farm. The results of the paper show a positive and significant relationship between the estate tax and business sales.

Unfortunately the results of these empirical papers do not provide a satisfactory answer to the question if the German inheritance tax endangers the transfer of businesses. Harriss (1949), Holtz-Eakin (1999) and Holtz-Eakin/Phillips/Rosen (2001) do not draw any conclusions if estate taxes endanger family businesses. Although the findings of Astrachan/Tutterow (1996) and Brunetti (2006) suggest a distinct negative impact of the US estate tax on the transfer of businesses the results can not be applied straight to Germany. The main reason is the remarkably higher tax load of businesses by the US estate tax compared to the German inheritance tax as a result of remarkably higher US tax rates. [5] In addition the conclusions of Astrachan/Tutterow (1996) are based on a survey of entrepreneurs, which presumably might provide distorted results as almost every survey offers complains about taxation by the respondents. Also the findings of Brunetti (2006) are not entirely convincing as he found out the liquidity effect, regularly made responsible for the negative effect of estate respectively inheritance taxes, is statistically not significant. That means the results do not support a liquidity link to business sales.[6] In addition it has to be taken into account that the sample is very small. It contains only 312 estates that include businesses in a time period of 4 years from which only a small fraction was sold (e.g in 1982 there were only 14.7% of 116 = 17 businesses sold).

3 Transfer of businesses in former and current German inheritance tax law

3.1 A brief German inheritance tax act-overview

The German Inheritance Tax Act (Erbschaft- und Schenkungsteuergesetz, ErbStG) applies to transfers of property and with it transfers of businesses regardless if transfers result from heritage or donation. Subject to tax is the enrichment of the beneficiary (and not the estate of the bequeather as in an estate tax) valued according to the Valuation Tax Act (Bewertungsgesetz, BewG). Former donations within the last ten years are added and tax exemptions (e.g. for businesses according to Sec. 13a ErbStG) are stripped just as personal allowances. The resulting so called “taxable enrichment” is subject to a progressive tax scale. Both personal allowances and tax rates differ according to consanguinity. Tax class I comprises spouses, children and grandchildren[7], tax class II contains other close relatives and

[5] The presented literature takes marginal US estate tax rates up to 55% into account.

[6] Brunetti (2006): 1989, states in this context: “it is difficult to understand why the estate tax effect is large while the liquidity effect is not”.

[7] In case of heritage parents and grandparents are included, as well.

tax class III applies in particular to unrelated individuals.[8] The tax scale is direct progressive and it is a graduated tariff.[9] This means according to the taxable enrichment there is one particular tax rate. In case of transferred businesses Sec. 19a ErbStG provides the application of the (beneficial) tax rate according to tax class I.

Table 1 depicts personal allowances according to former and current inheritance tax law.

Table 1: Personal allowances according to inheritance tax status 2008 and 2009

Tax class	Consanguinity	Former tax law (Sec. 16 ErbStG 2008) in Euro	Current tax law (Sec. 16 ErbStG 2009) in Euro
I	spouses	307,000	500,000
	children	205,000	400,000
	grandchildren	51,200	200,000
	others	51,200	100,000
II	all	10,300	20,000
III	all	5,200	20,000

Table 2 illustrates nominal tax rates according to former and current inheritance tax law.

Table 2: Inheritance tax scale according to inheritance tax status 2008 and 2009

Taxable enrichment in Euro up to		Tax rates in %				
		Tax class I	Tax class II		Tax class III	
2008	2009	2008 & 2009	2008	2009	2008	2009
52,000	75,000	7	12	30	17	30
256,00	300,000	11	17		23	
512,000	600,000	15	22		29	
5,113,000	6,000,000	19	27		35	
12,783,000	13,000,000	23	32	50	41	50
25,565,000	26,000,000	17	37		47	
Beyond		30	40		50	

The notable increase of tax rates in tax class II and III has no impact on businesses because businesses are always subject to tax class I as long as the transfer is not tax-free at all.

8 For details refer to Sec. 15 ErbStG.

9 Sec. 19 Para. 3 ErbStG secures marginal tax rates lower than 75 %.

3.2 Taxation of businesses according to former German inheritance tax law

The former German inheritance tax law granted businesses[10] three subsidies. On the one hand, the average tax value of businesses fell below market value.[11] Tax values of sole proprietorships and partnerships amounted on average about 50% of market values whereas shares in non-listed corporations were ordinary rated with 70% of their market value (Sureth et. al. (2008): 193-195).[12] On the other hand former inheritance tax law provided two explicit tax subsidies for businesses (Sec. 13a and 19a ErbStG 2008). Sec. 13a ErbStG 2008 provided a tax allowance of 225,000 Euro for every business as well as assessing the remainder only with 65%. If a business was transferred to an individual who belongs to tax class II or III, 88% of the business was taxed according to the (lower) rate of tax class I (Sec. 19a ErbStG 2008). The last two subsidies required the business not being sold within five years after its transfer.

3.3 Vast or entire tax exemption for businesses in current German inheritance tax law

The vast or entire tax exemption of businesses (Sec. 13a and 13b ErbStG 2009) is the crucial and most controversial discussed point of German Inheritance Tax Reform Act 2009.[13]

The vast tax exemption of businesses forms the rule and releases businesses to 85% from taxation (Sec. 13b Para. 4 ErbStG) and is guaranteed officially.[14] In addition Sec. 13a Para. 2 ErbStG provides a tax allowance of 150,000 Euro for the remaining 15%.[15]

The 85%-tax exemption is granted only if the following requirements are fulfilled:

- Non-productive assets in terms of Sec. 13b Para. 2 ErbStG must not account for more than 50% of all assets. Otherwise 100% of business assets are subject to inheritance tax.
- Within seven years after the transfer of a business aggregate wages must not fall below 650% of average wages paid per year before transferring the business (so called job-clause of Sec. 13a Para. 1 ErbStG). If aggregate wages fall below the threshold of 650% the 85%-tax exemption is reduced according to the shortfall of aggregate wages.[16]
- A sale of the business within seven years after its transfer leads to a reduction of the 85%-tax exemption on a pro-rata basis (so called sales-clause of Sec. 13a Para. 5 ErbStG). If

[10] Tax privileged businesses incorporate sole proprietorships and partnerships in any sector (agriculture and forestry, commercial and industrial as well as freelance business). In addition qualified shareholding in corporations (quota greater than 25%) is also tax privileged.

[11] See for a discussion of former tax valuation procedures with regard to economic valuation procedures e.g. Hartmann (1962); Bolsenkötter (1969); Groh (1970); Linke (1981); Moxter (1976); Hübner (1993).

[12] For the valuation of corporations for tax purposes in detail refer to Müller (2008).

[13] This contribution does not present all of the recent amendments in German inheritance tax law. For a detailled survey see Fahrenschon (2008); Fechner (2008); Herbach/Kühnold (2008); Lüdicke/Fürwentsches (2009); Oertzen (2008); Wiegand (2008); Wiese/Lukas (2009).

[14] For a detailed description of the current inheritance tax rules with respect to transfer of businesses see e.g. Balmes/Felten (2009).

[15] The tax allowance of 150,000 Euro is reduced if the remaining 15% exceeds 150,000 Euro. The reduction amounts to 50% of the exceeding value. This means that businesses up to a value of 1 Mio. Euro can be transferred entirely tax-free.

[16] In contrast, the tax allowance according to Sec. 13a Para. 2 ErbStG is unaffected.

sales revenues are reinvested the tax privilege keeps unaffected. Excessive withdrawals cause a reduction of the 85% tax exemption in either case.[17]

The non-tax exempt fraction of business assets benefits from the tax privilege of Sec. 19a ErbStG and is taxed according to tax class I irrespective of consanguinity.

Alternatively to the 85%-tax exemption an entire tax-free transfer of a business can be claimed (Sec. 13a Para. 8 ErbStG) if the following restrictive requirements are fulfilled:

- Non-productive assets in terms of Sec. 13b Para. 2 ErbStG must not add up to more than 10% of all assets.
- The aggregate wage rule holds for ten years. Within this period 1000% of the average wages per year before transferring the business must be paid.
- The retention period is ten instead of seven years.

According to the jurisprudence of the Federal Constitutional Court the new valuation procedures for businesses (Sec. 199-203 BewG) are supposed to result in market values. Businesses have to be assessed even in case of claiming for an entire tax-free transfer of businesses according to Sec. 13a Para. 8 ErbStG.

4 Pros and cons for an inheritance tax privilege in favour of businesses

The most popular argument in favour of an inheritance tax privilege for businesses is the potential negative effect on family businesses and in the end on jobs (see e.g. Astrachen/Tutterow (1996); Brunetti (2006); Harris (1949); Holtz-Eakin/Phillips/Rosen (2001)). This is also stated by the German Government to justify the introduction of the comprehensive tax subsidy for businesses. Inheritance tax can jeopardise businesses due to liquidity problems if the transferees of a business lack liquid assets to meet inheritance tax liability and if, in addition, imperfect capital markets inhibit refunding. Furthermore, advocates of an inheritance tax privilege in favour of businesses stress the specialised leading skills of relatives resulting from their particular identification and family specific know-how (Bennedsen et. al. (2007)). In addition it is stated that principal agent problems are less virulent. This leads to the conclusion businesses should remain within the family for welfare reasons and therefore a tax privilege is justified.

But, there are several arguments that challenge this perception. To keep the management inside of a family reduces the pool of capable managers considerable without need (Maiterth/Niemann et. al. (2006); Sachverständigenrat (2008/2009)). Furthermore, empirical findings to the performance of businesses run by families or heirs for Denmark, France, Germany, the USA und the UK militate against a tax privilege. Bloom/van Reenen (2006) found out that mismanagement in particular occurs if a business is transferred to the eldest son (primogeniture), whereas the management abilities are not affected if the entire family appoints the management of a transferred business. In contrast Morck/Shleifer/Vishny (1988), Bennedsen et. al. (2007), Pérez-González (2006) and Villalonga/Amit (2006) detected in general a significantly poorer performance of companies run by heirs compared to firms with

[17] The tax allowance according to Sec. 13a Para. 2 ErbStG remains again unaffected.

non-family executives. Grossmann/Strulik (2008) disapprove an inheritance tax privilege for businesses in a general equilibrium model. In their findings lower management skills dominate transaction cost savings. But, if the Government decides to introduce a tax privilege, there should be no link to the business being continued by the heirs.

A further argument against an inheritance tax privilege in favour of businesses is provided by the resulting considerable compliance costs of such a regulation. As a glance at Sec. 13a and 13b ErbStG reveals there are considerable enforcement costs in form of declaration costs for taxpayer as well as control costs for tax authorities.[18] A tax privilege for particular asset categories requires a clear distinction of privileged and unprivileged assets. As a definite classification of asset categories can not be delivered, taxpayers face enormous incentives and as a result high tax planning costs to re-qualify unprivileged into privileged assets. This in turn causes (costly) defence action by the tax authorities. These considerable compliance costs would not emerge from an inheritance tax with a broad tax base and thus without a differential treatment of asset categories.

Another notable aspect regards measures taken by entrepreneurs to minimize the impact of inheritance tax on the transfer of their business.[19] As empirical findings indicate, entrepreneurs take – dead weight costs generating – measures to minimise the impact of the inheritance tax on the transfer of their business.[20] This might be the reason for the lack of empirical evidence that the former German inheritance tax caused liquidation or sales of firms. Interestingly this view has been confirmed by the German minister of finance Peer Steinbrück[21], who was in charge when the German Inheritance Tax Reform Act 2009 took place.

A further relevant point against a tax privilege for businesses in form of a tax exemption is the lack of accuracy of this measure. Even if public welfare or other reasons required businesses to stay within a family[22] a general tax exemption would not be the appropriate measure to assure this. Liquidity problems which, as mentioned above, could result from capital markets imperfections would be mitigated properly by a tax deferral regulation.[23] However, a general tax exemption can by no means be justified. Furthermore, with respect to tax induced liquidity

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18 See for the categorisation of compliance costs in declaration costs and enforcement costs and furthermore declaration costs and control cost as part of the enforcement costs Wagner (2005): 94. The considerable enforcement costs of the inheritance tax privilege in favour of businesses are already revealed by throwing a glance at Sec. 13a and 13b ErbStG.

19 In a survey of Travis Research Associates (1995): 3, four out of five respondents stated that they have already taken steps to mitigate liquidity problems, e.g. by the purchase of life insurance. But if the heirs were to inherit the business they would lack liquidity to balance tax liability.

20 See Astrachan/Tutterow (1996); Holtz-Eatkin (1999); Holtz-Eatkin/Phillips/Rosen (2001). In a survey of Travis Research Associates (1995): 3, four out of five respondents stated that they have already taken steps to mitigate liquidity problems, e.g. by the purchase of life insurance. But if the heirs were to inherit the business they would lack liquidity to balance tax liability.

21 This happened during a speach in the German Parliament on the Inheritance Tax Reform Act 2009 on 27.11.2008.

22 According to Hey (2007): 573, it is – irrespective of public welfare aspects – a legitimate objective to support the “culture of family businesses”.

23 See Maiterth/Niemann et. al. (2006); Bach/Broekelschen/Maiterth (2006): 1967; Hey (2007): 573; Sachverständigenrat (2008/2009): recital 366; Seer (2009): 236; Viskorf (2008): 21.

problems it has to be kept in mind that an inheritance tax law with no exemptions enables remarkable lower tax rates, as will be shown later on. This in turn could mitigate liquidity problems to a large extent if not eliminate them.

Last but not least the perception of a particular tax as fair or unfair plays a crucial role for its acceptance. If a tax is regarded as fair people will be less reluctant to pay as if they regard the tax as unfair.[24] As the current German inheritance tax burden of an individual depends crucially on the asset category of the bequest it might presumably be regarded as unfair. But it remains unclear to what extent the job protection argument countervails this perception.

Summing up the arguments neither a negative effect of the inheritance tax on family businesses nor its innocuousness can be proven theoretically. In the end it is an empirical question if or, respectively, to what extent the German inheritance tax causes liquidity problems for businesses. For this reason we quantify the inheritance tax burden of each transferred businesses empirically within the framework of the micro simulation model ErbSiHM based on the data of the latest inheritance tax statistics of the Federal Statistical Office Germany. Unfortunately the data merely contain information about the inheritance tax status of the transferee of a business but lack information, what happens to the business after being transferred. Hence, we can not prove in an econometric model if or, respectively, to what extent the German inheritance tax forces business sales. But we can tackle the problem by gaining deeper insights in (possible) liquidity problems caused by the inheritance tax, which allows some sound predictions, if tax privileges for businesses can be justified.

5 Micro simulation model ErbSiHM

5.1 Model structure

Our micro simulation model ErbSiHM employs two databases. The main database is the inheritance tax statistics 2007 of the Federal Statistical Office Germany (subsequent ITS 2007).[25] As ITS 2007 does not contain transfers of property in its entirety, we have completed ITS 2007 by means of the data of the socio-economic panel (SOEP) of the German Institute for Economic Research. ErbSiHM is a static micro simulation model and we have renounced static ageing. The static model structure results from lack of information about behavioural response to (changes in) inheritance tax.[26] We refrained from static ageing as an extrapolation according to numbers of property transfers does not alter calculated revenue-neutral tax rates in our virtual inheritance tax system and alternative extrapolation scenarios fail due to lack of information.

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[24] See Schneider/Enste (2000): 93 f.

[25] The ITS 2007 is the latest inheritance tax statistics and it can be used for scientific purposes since January 2009.

[26] To develop a dynamic model requires information about behavioural response to inheritance tax. As far as we know there are neither reliable estimation results of tax elasticity nor do data exist that would allow such estimations. Furthermore behavioural response to inheritance tax is presumably relatively moderate as it requires both transfer of property and the removal of the decedent as well as the beneficiary (see Sachverständigenrat (2008/2009): 371).

5.2 Micro simulation model part based on inheritance tax statistics 2007

The latest data of the inheritance tax statistics of the German Federal Statistical Office originate from 2007 and is our main data source. ITS 2007 contains micro data of every single transfer of property if an inheritance tax assessment in 2007 took place.[27] ITS 2007 provides several detailed information which enabled us to establish our micro simulation model. For example ITS 2007 offers information if a property is transferred via heritage or donation. In addition it reveals the composition of the property, the tax class, the amount of taxable enrichment and tax liability. This enables us to calculate for each transferee his taxable enrichment and his tax liability according to the former inheritance tax law and a virtual inheritance tax without subsidies. In addition detailed information about asset categories allow for identification of transferred businesses and for analysing their tax situation.

ITS 2007 is the most comprehensive data base to analyse German inheritance tax empirically. It comprises 214,232 transfers of property whereof 154,402 transfers result from heritage and 59,830 from donations. Within the 214,232 transfers of property 27,942 (13.5%) regard transfers of a business. Most of the aggregate tax base (68%) is taxed according to tax class I, though only 31% of all transfers take place within this tax class. ITS 2007 displays tax revenue of 4.2 Billion Euro which serves as a reference parameter for the simulation of a virtual revenue neutral inheritance tax with a broad tax base and low tax rates. Tax revenues result from an aggregate tax base (incl. former donations) of 28 Billion Euro. The underlying transfer of net property in tax values accounts for 35 Billion Euro.

As ITS 2007 provides only tax values[28] market values have to be imputed. The imputation of market values is inevitable for the simulation of a virtual inheritance tax without tax subsidies as well as for the SOEP-based component of ErbSiHM. For the imputation we employed market value-multipliers which were gained empirically in other contributions. Market value-multipliers for businesses were identified by Sureth and J. Müller based on DataStream.[29] The empirically obtained ratio of market value to tax value (market value-multiplier) for sole proprietorships and partnerships is 1.8572[30] and for shares of non-listed corporations 1.4493. The empirical market value-multiplier for real estate is based on purchase price data for Berlin and the underlying ratio of tax value to market value was established by Broekelschen/Maiterth (2008): 530. The multiplier of 1.4286 is roughly confirmed in subsequent analyses on basis of purchase price data for Lower Saxonia. For the imputation of market values of agriculture and forestry businesses we adopted a multiplier of 4.[31] As the in terms of German Inheritance Tax Act so called “residual property” consists of e.g. bank

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[27] If it is foreseeable that no tax assessment will happen then transfer of property is not included in ITS 2007. This applies to transfers of property with tax values below personal allowances.

[28] There is one exception which concerns “composite donations” as a subgroup of the donation population. For composite donations ITS 2007 also contains market values which are used as an auxiliary attribute in tax assessment procedure. As transferred debt is assessed by market value and some assets categories are not, debts can only be deducted according to the ratio of tax value to market value of transferred gross property.

[29] See in detail Maiterth/Sureth (2007): 39-42 and 51-57; Sureth et al. (2008): 192-195.

[30] The Sachverständigenrat (2008/2009) quotes a DIHK survey for 72 big family enterprises which states market values being 3 to 3.5 times higher than tax values (Sachverständigenrat (2008/2009): racital 362). Anyway, the empirical findings of Sureth et. al. (2008) do not confirm this figures.

[31] By imputing market values into the ITS 2007 the transfer of net property in market values accounts 48 Billion €. This is an increase compared to figures in tax value of around 37%.

account, cash and stocks, tax and market values are identical and an imputation is not necessary.

5.3 SOEP-based supplementary model

The interaction of personal tax allowances and undervaluation of businesses and real estate according to the former German Valuation Tax Act results in a considerable under-recording of transfers of property in ITS 2007. To cover this data gap we have employed the SOEP. In a first step we imputed tax classes into SOEP on basis of the figures of ITS 2007. Then we classified both ITS 2007 data and SOEP data according to transferred net property in market values broken down by tax classes and by heritage versus donation. Subsequently we compared classified data of ITS 2007 and SOEP with respect to population density. The results show – as we have expected – an under-recording of transfers of low-value property in ITS 2007.[32] In cases of heritage transfers of property up to 550,000 Euro are under-recorded in ITS 2007. In cases of donation this holds for transfers of property up to 350,000 Euro. We solved the problem of under-recording in ITS 2007 by adding transfers of property which are not recorded in ITS 2007 to this data base (SOEP-based supplementary model). We created new datasets within the low-value property population of ITS 2007 by multiplying each dataset of ITS 2007 in a particular property class until the same amount of transfers occurred as in the corresponding SOEP-population (SOEP-based supplementary population). Thus the ITS 2007-population was boosted by approximately 674 thousand transfers of property with an aggregate net property value of 23 Billion Euro.

5.4 Reliability of ErbSiHM

We proved the quality of ErbSiHM, and with it the reliability of our results, by checking aggregate values calculated by ErbSiHM against displayed values in (original) ITS 2007. Table 3 depicts aggregate tax base and aggregate tax liability displayed and calculated for the entire ITS 2007 population. The comparison of calculated with displayed values proves the reliability of the employed attributes of ITS 2007. In addition it shows how precise the tax assessment procedure is reproduced by ErbSiHM. A further quality check was made for the imputation of market values into ITS 2007. For this purpose we compared imputed market values with displayed market values for the subpopulation of composite donations.[33]

Table 3: Displayed and calculated aggregate values on bases of the (original) ITS 2007 population

	Aggregate tax base in million Euro	Aggregate tax liability in million Euro	Market values in million Euro (subpopulation composite donations)
Displayed in ITS 2007	28.182	4.221	2.993
Calculated by ErbSiHM	28.052	4.212	2.965
Difference	**0.4613 %**	**- 0.2132 %**	**- 0.95%**

[32] In addition we found an under-recording of transfers of high-value property in SOEP.
[33] For this subpopulation ITS 2007 comprises market values as stated in footnote 28.

Table 3 shows only marginal differences between calculated and displayed values. This provides proof of the reliability of the employed micro simulation model ErbSiHM as well as of the quality of the applied imputation procedure. Hence, the subsequently represented results can be rated as reliable.

6 Empirical Results

6.1 Tax rates in case of an inheritance tax without tax base subsidies

In the following our focus is not only on analysing potential liquidity problems caused by the former German inheritance tax. We also investigate possible damage of a revenue neutral inheritance tax law without subsidies, neither with respect to tax base nor to tax rates. For this purpose we have considered a virtual (uniform) inheritance tax law, based on current law, with the exception of tax subsidies for businesses and real estate.

As there are several alternatives to gain tax neutrality in such a tax system, we have calculated tax rates that assure revenue neutrality according to every particular tax class. Table 4 shows to what extent tax rates in every tax class could be reduced by abolishing the tax subsidies of the current inheritance tax law.

Table 4: Tax rate cuts and top tax rates in case of revenue neutrality per tax class

	Tax class I	Tax class II	Tax class III
Reduction of tax rates	59%	23%	19%
Range of tax rates	2.8%-12.3%	23.1%-38.5%	24.3%-40.5%

Table 4 reveals that a uniform inheritance tax would be attended by substantial tax rate cuts in tax class I, whereas considerable high top tax rates would be remaining in tax class II and III. The tax rate cuts indicate an enormous shift of the tax load in particular from businesses to the remaining asset categories in current law.

6.2 Contribution of businesses to tax revenue

This chapter provides a survey of the relevance of transferred businesses for former and current inheritance tax revenue as well as for tax revenue in case of the virtual inheritance tax without tax subsidies as presented above. Table 5 highlights the contribution of businesses to former, current and virtual inheritance tax revenue.[34] The figures in table 5 and in subsequent tables are calculated by ErbSiHM based solely on the ITS 2007 population. As the SOEP data lack information on asset categories, a detailed analysis in respect of asset categories based on the SOEP-based supplementary population can not be conducted.

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[34] Due to lack of information on the use of the tax exemptions for businesses assumptions have to be made. We have implied that 30% of all businesses will claim against the entire tax exemption according to Sec. 13a Para. 8 ErbStG. Tax revenues in later periods resulting from the job-clause and the sales-clause were not taken into account.

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Table 5: Contribution of businesses to transferred net property and tax revenue

	Contribution to				
	Transferred net property		Tax Revenue		
	Former tax values	Market values	Former law	Current law	Virtual law
Business assets	22.16%	31.87%	21.45%	5.35%	34.89%
Real estate	31.25%	33.72%	24.61%	35.48%	25.98%
Residual property	46.59%	34.41%	53.94%	59.17%	39.13%
Total	*100.00%*	*100.00%*	*100.00%*	*100.00%*	*100.00%*

Table 5 provides an impression of the magnitude of the tax subsidy for businesses in former and in current German inheritance tax law. Although businesses account for almost one third of all assets (in market values) their share to tax revenue is less than 6%. In contrast businesses contributed after all more than 20% to former inheritance tax revenue. In virtual inheritance tax law businesses have a share in tax revenue of nearly 35% which exceeds the share in transferred net property. This in turn indicates transfers of businesses take on average part in higher property brackets than the remaining asset categories.

For a first sketchy assessment of the possible harm, the inheritance tax might cause to businesses, table 6 depicts several figures for the subpopulation “business transfers” differentiated according to heritages and donations. The subpopulation “business transfers” contains only property transfers which includes businesses.

Table 6: Business transfers according to heritage and donation

	Contribution to					
	Number of business transfers	Aggregate business assets	Aggregate total assets	Tax Revenue		
				Former law	Current law	Virtual law
Transfer by heritage	60.29%	31.14%	47.35%	56.06%	74.65%	49.95%
Transfer by donation	39.71%	68.86%	52.65%	43.94%	25.35%	50.05%
Total	*100.00%*	*100.00%*	*100.00%*	*100.00%*	*100.00%*	*100.00%*

Table 6 delivers some interesting insights into transfers of businesses. For example table 6 reveals that about 40% of all businesses and with them more then two-thirds of all business assets are transferred via donation. This displays that the predominate volume of business assets is passed prearranged via donations. But, total assets are not as unequally distributed in favour of donations as business assets. This implies transfers of a business by heritage are on average to a larger extent accompanied by other assets than businesses. Although aggregate total assets are lower in case of bequeathed businesses than in case of bestowed businesses the contribution to tax revenue is higher in any tax law. This arises from the fact that transfers of property and businesses in tax class II and III are more frequent in case of inheritance then in case of donation.

In addition the results of table 6 allow for a first cautious appraisal of possible negative effects of the former German inheritance tax on transferred businesses. As donations take in all likelihood only place if either the transferred business is not assessed to be endangered by the former German inheritance tax law or a subsequent sale of the business is intended, we regard them as not endangered by the inheritance tax. Consequently, in respect of the former German inheritance tax we turn our attention in particular to transfers of businesses via heritage as they occur unplanned, and hence, appear especially vulnerable to liquidity problems. Nevertheless, we also account for donations to get a complete picture. With regard to a virtual inheritance tax with no tax privileges for businesses as a possible alternative to current German inheritance tax the impact of taxation on both forms of business transfers is of coequal interest.

6.3 Inheritance tax burden of businesses

After having demonstrated that businesses are subsidised to a large extent, the question occurs if this appears to be necessary for their survival or if, as a result of successful lobbying, this solely serves particulate interests. Consequently the results presented in this section are entirely based on the subpopulation “business transfers”.

To get a first impression of the (possible) impact of the inheritance tax on liquidity of businesses, we have computed the ratio of inheritance tax liability to total net property (tax *amount* quota). By calculating the average tax amount quota for all heritages and donations, which include transfers of a business, we have differentiated between an unweighted and a weighted quota. The unweighted quota represents the average of the individual tax amount quota of every single beneficiary. What we call “weighted tax amount quota” equals what is usually called average aggregate tax burden and is calculated by dividing aggregate inheritance tax revenue by aggregate transferred property.[35] Table 7 depicts the tax amount quota.

Table 7: Tax amount quota of all businesses

	Tax amount quota			
	Former tax law		Virtual tax law	
	Unweighted	Weighted	Unweighted	Weighted
Transfer by heritage	6.67%	8.84%	8.06%	8.83%
Transfer by donation	1.82%	6.23%	4.18%	8.04%
Total	*4.74%*	*7.47%*	*6.52%*	*8.46%*

Table 7 comprises several interesting results. We start with the higher unweighted and weighted tax amount quotas of properties which are transferred via heritage than via donation. The differences in tax amount quota do not indicate that properties in case of succession are on average more valuable than in case of donation, as the opposite is true. The higher tax amount quotas emerge from significantly more businesses being transferred in tax class II and III in case of heritage then in case of donation. The sustainable disparity of unweighted and

35 By weighting individual tax amount quotas by the value of the transferred property the resulting average is equivalent to the weighted tax amount quota.

weighted tax amount quotas in case of donations is evidence of a rather unequal distribution of bestowed property. In contrast, the distribution of bequeathed property which includes businesses is less unequal.

Furthermore table 7 depicts generally higher tax amount quotas in virtual tax law, although even higher quotas could have been expected as the contribution of businesses to tax revenue is significantly higher in virtual tax law compared to former tax law as seen in table 5 (34.89% versus 21.45%). But, as we will later see in detail, transfers of a business are very often accompanied by other assets which in turn face in virtual tax law almost lower tax burdens than in former tax law. The tax burden on residual property is reduced by 19% (tax class III) to 59% (tax class I) and also real estate is considerably less burdened in tax class I. As most of all property transfers which include businesses take place in tax class I (57.19% of all cases and 88.07% of the volume) these tax reductions balance the tax increase for businesses to some extent or even entirely in case of the weighted quota of bequeathed businesses.

Table 7 allows for a first precautious conclusion even at this early state of our empirical analysis. As the tax amount quotas are in either case far below 10% neither the former German inheritance tax nor a virtual inheritance tax without tax subsidies for businesses are likely to endanger businesses to a large extent. But as the marginal tax rate for businesses is 30% in former tax law and even 40.5% in virtual tax law tax induced damage still remains possible.

For the identification of negative effects of the inheritance tax on the liquidity positions of businesses it is inadequate tax amount quotas to consider only, as it remains unclear if the entire tax liability burdens businesses effectively.[36] Hence we calculate to what extent the inheritance tax liability can be covered by other assets which are transferred in addition to businesses. This means, merely the fraction of tax liability which exceeds transferred real estate and residual property is taken into account.[37] As we are interested in the tax load that has to be covered by business assets we have divided the tax load by the market value of business assets to gain what we call tax *load* quota. In other words, the tax load quota incorporates only the part of tax liability which burdens transferred businesses effectively. Table 8 resembles table 7 and depicts the tax load quota.

Table 8: Tax load quota of all businesses

	Tax load quota			
	Former tax law		Virtual tax law	
	Unweighted	Weighted	Unweighted	Weighted
Transfer by heritage	0.07%	2.21%	0.40%	4.16%
Transfer by donation	1.12%	5.93%	2.99%	7.78%
Total	*0.49%*	*4.77%*	*1.43%*	*6.66%*

[36] Frequently is stated that the bulk of an entrepreneur’s estate consists of business assets and relatively little liquid assets (see e.g. Brunetti (2006): 1976).

[37] Holtz-Eakin/Phillips/Rosen (2001) analyse whether and how owner of family business attempt to close the gap between estate tax liability and liquid assets by the purchase of life insurances.

Table 8 shows substantially lower tax load quotas compared to tax amount quotas by exemption of the weighted quota of bestowed businesses. This indicates that transferees of a business receive very often other assets in addition to the business which enable them to balance large parts or even the entire inheritance tax liability. In contrast to table 7 weighted values exceed unweighted values significantly in either case. This indicates a highly unequal distribution of tax burdened businesses.

Although the surprisingly low tax amount and tax load quotas displayed in table 7 and 8 suggest no general threat of businesses, it can not be ruled out that the inheritance tax endangers part of the businesses. In particular there are hints that the inheritance tax could in particular endanger valuable businesses and with them many jobs. To tackle this issue table 9 differentiates between businesses which do not face any tax load and thus which do. Table 9 is classified according to the value of the transferred net property.

Table 9: Number of tax loaded and non tax loaded businesses in former and virtual German inheritance tax

Value of net property in Euro		Transfer by heritage			Transfer by donation		
			Tax loaded			Tax loaded	
From	To	All	Former Tax law	Virtual tax law	All	Former tax law	Virtual tax law
0	20,000	2,051	5	11	705	132	3
20,001	100,000	4,984	28	118	1,699	281	398
100,001	500,000	5,817	49	210	4,191	554	947
500,001	1,000,000	2,058	49	115	2,513	726	1,786
1,000,001	10,000,000	1,838	154	217	1,876	1,432	1,547
Beyond		97	38	45	113	110	102

Table 9 reveals some very amazing results in particular in respect of bequeathed businesses. It is demonstrated that less than 2% (323 businesses) of all (16,845) bequeathed businesses are effectively burdened with former German inheritance tax law. This means that more than 98% of bequeathed businesses face no tax load at all. Even in the class of net properties over 10 million Euro more than 60% of businesses are not burdened with former German inheritance tax. But although only about 2% of bequeathed businesses are burdened by former inheritance tax more than one third (36%) of aggregate business assets are concerned. Donated businesses face in less than 30% (3,235 businesses) of all businesses (11,097) a tax load in former German inheritance tax, but high value businesses (value more than 1,000,000 Euro) are burdened with tax in most cases. Hence, 76% of aggregate business assets belong to tax burdened businesses. As the figures in table 9 demonstrate in virtual inheritance tax law businesses face more often tax loads than in former tax law. This holds for both forms of transferring a business, heritage and donation.

Table 10 depicts the share of business assets in total assets and delivers an explanation why many businesses do not face a tax load although they are subject to tax. It also illustrates the reason for bestowed businesses facing a higher tax load than bequeathed businesses. Like table 9 table 10 is classified according to the value of the transferred net property.

Table 10: Share of business assets in total assets according to net property classes

Value of net property in Euro From	To	Transfer by heritage	Transfer by donation
0	20,000	10.97%	79.71%
20,001	100,000	16.20%	73.26%
100,001	500,000	21.02%	80.14%
500,001	1,000,000	31.18%	91.11%
1,000,001	10,000,000	46.80%	94.68%
Beyond		76.52%	99.34%
Total		*47.18%*	*93.85%*

Table 10 reveals a rather different structure of the composition of total assets between transfers via heritage and donation. Businesses are throughout the predominant source of assets in case of donation. If transferred net property exceeds 500,000 Euro businesses even amount to more than 90% of total assets. Hence the inheritance tax liability has to be balanced widely by business assets or other sources of the transferee. Transfers of businesses via heritage are accompanied to a far larger extent by other assets than donations. Even properties worth more than 10 million Euros include (on average) almost 25% of other assets, which can be used to meet or mitigate inheritance tax liability. Table 10 delivers a quite good explanation for the, on average, rather low tax load quota, as businesses are, on average, by far not the only transferred asset category.

Up to now it can be asserted that neither the former German inheritance tax nor the virtual inheritance tax is a threat for the vast majority of businesses. But as the businesses which are hit by the inheritance tax possess a large share in total business assets it can not be ruled out that the inheritance tax causes severe damage to affected businesses. Hence, in the subsequent analysis we quantify the magnitude of tax loads. Consequently the subsequent remarks concentrate on the subpopulation of tax loaded businesses.

Table 11 displays tax load quotas of tax burdened businesses.

Table 11: Tax load quota of tax burdened businesses

	Tax load quota			
	Former tax law		Virtual tax law	
	Unweighted	Weighted	Unweighted	Weighted
Transfer by heritage	3.80%	6.18%	9.50%	9.73%
Transfer by donation	3.83%	7.82%	6.93%	9.30%
Total	*3.83%*	*7.53%*	*7.27%*	*9.38%*

Compared to the figures for all businesses presented in table 8 both tax load quotas, unweighted and weighted, are considerably higher. But, on average the tax load of businesses in former tax law is in either case below 8% and in virtual tax law below 10%. As we consider a tax load quota of up to 10% not as a serious threat for businesses, it can be stated that even tax burdened businesses are in general not endangered by German inheritance tax.

But for an appraisal of the potential harm of the inheritance tax the scale of tax loads for individual businesses is relevant. As the impact of the inheritance tax on liquidity is decisive for the survival of every single firm the subsequent tables only contain unweighted tax quotas.

Table 12a and 12b display the tax load quota in former German tax law according to the market value of businesses in a Box-Whisker-Plot extending to the 5th and 95th percentiles. We employ market value of business assets instead of net property for classification purposes in the following tables as we are focusing the tax load of businesses.[38]

Table 12a: Tax load quota of bequeathed businesses in former German tax law

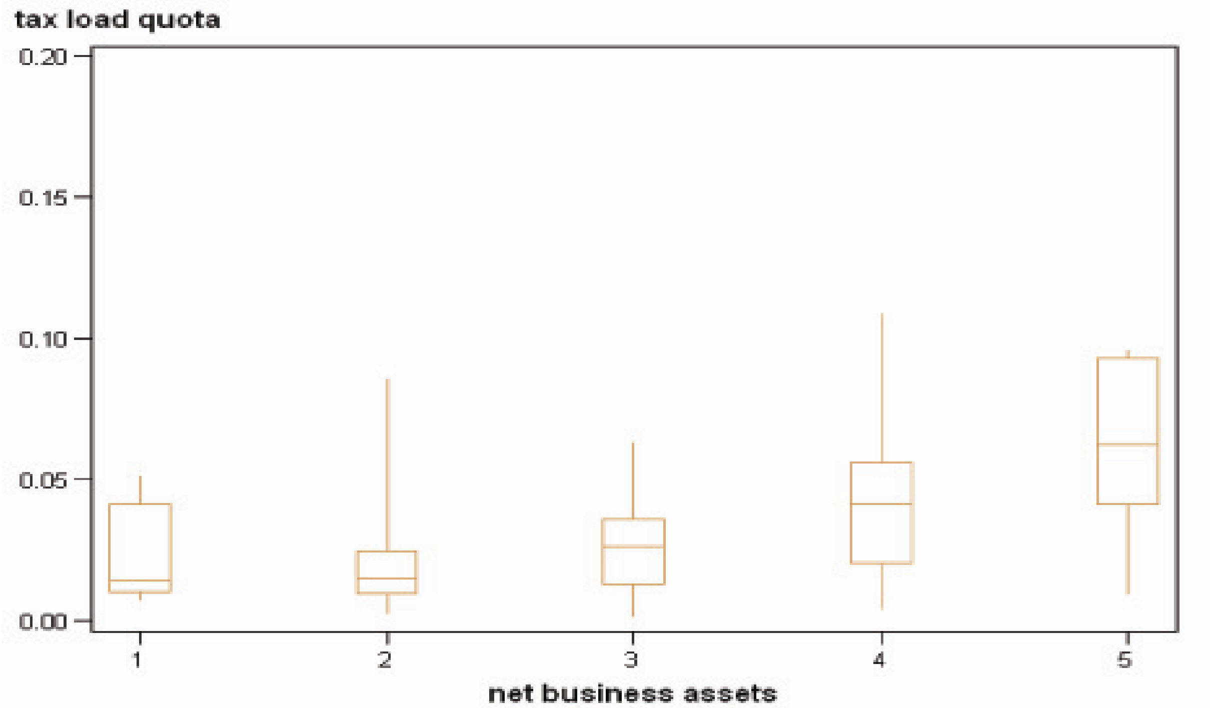
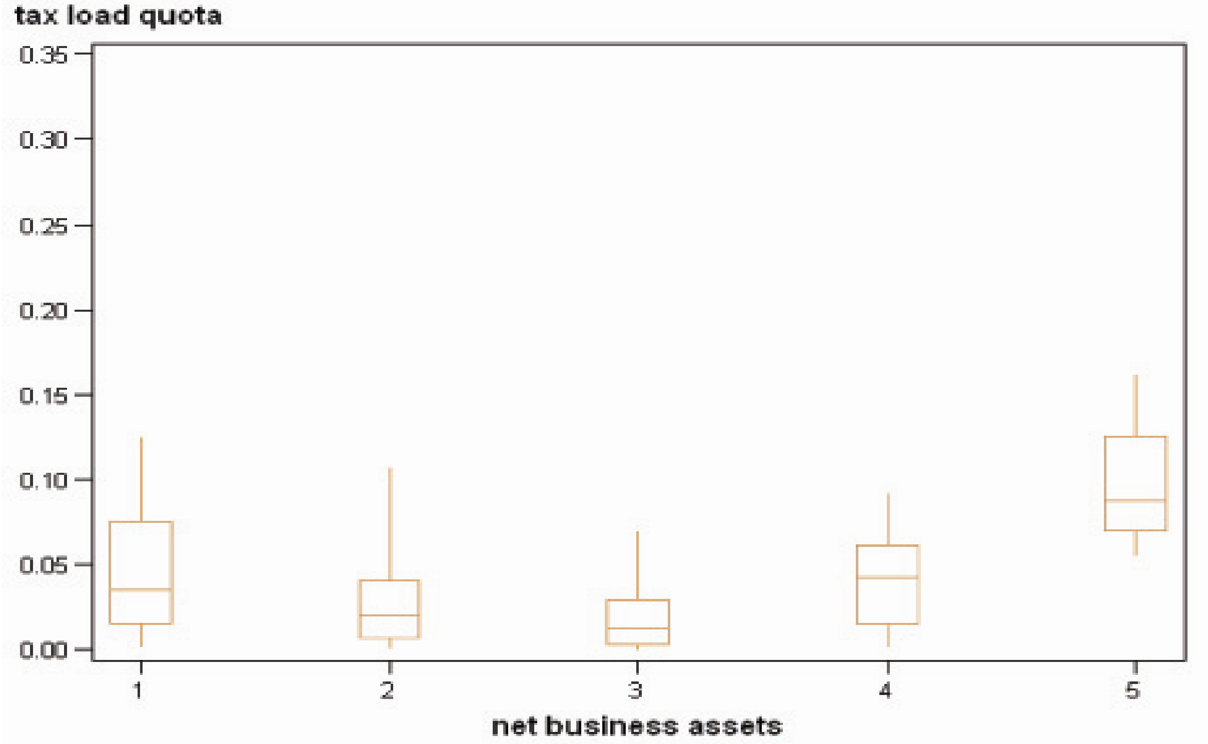


Table 12a reveals a tax load quota of below 5% for the vast majority of businesses (71%) which possess 40% of all business assets. Even 75% of all businesses which are passed in a business assets range between one to ten million Euros (class 4) face a tax load not more than 6%. For 50% of businesses with a business assets value above 10 million Euros tax load quota is below 7%. For the remaining businesses within this business assets class the tax load quota in 95% falls below 10%. Tax load quotas above 15% hit only 3 businesses.

[38] The classification in tables 12a to 13b refers to figueres between 1 and 5, where 1 represents the business assets value class up to 100,000 Euro, 2 the business assets value class up 500,000 Euro, 3 the business assets value class up 1,000,000 Euro, 4 the business assets value class up 10,000,000 Euro and 5 the business assets value class beyond 10,000,000 Euro.

Table 12b: Tax load quota of bestowed businesses in former German tax law



The figures for bestowed businesses do not highly differ from the results presented above. The most significant differences are a higher tax load of low value businesses (business assets value below 100,000 Euro (class 1))[39] and more businesses with a tax load quota over 10%. But there are only 31 (0.96%) businesses which possess 6.56% of all business assets facing a tax load quota over 15%.

Summing up, the results for the former German inheritance tax lead to the conclusion that former German inheritance tax does not endanger bequeathed businesses. Only few businesses face tax load quotas above 10% and therefore may have problems of financing (parts of) the inheritance tax. For bestowed businesses the results reveal that plans of donating a business do not failure due to former German inheritance tax.

The conclusions for the virtual inheritance tax are by far less clear-cut as table 13a and 13b depict.

39 The explanation for this finding is that more businesses in this business asset value class are passed to transferees in tax class II and III than in case of heritage.

Table 13a: Tax load quota of bequeathed businesses in virtual German tax law

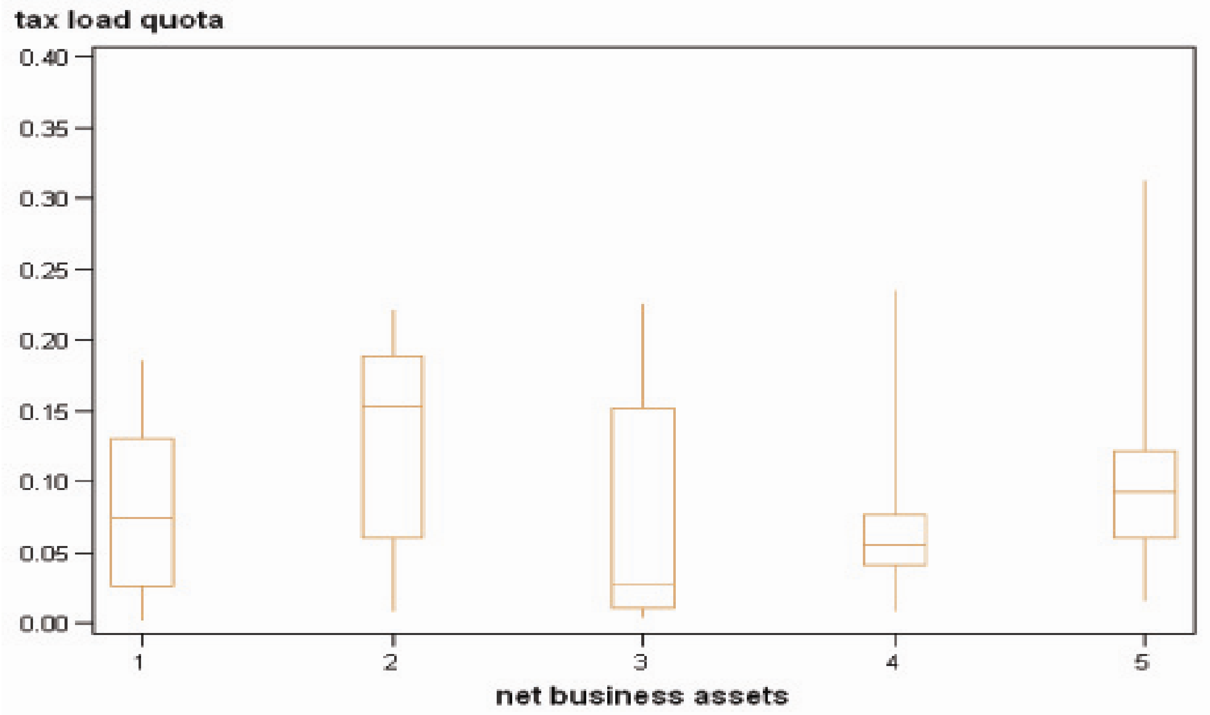
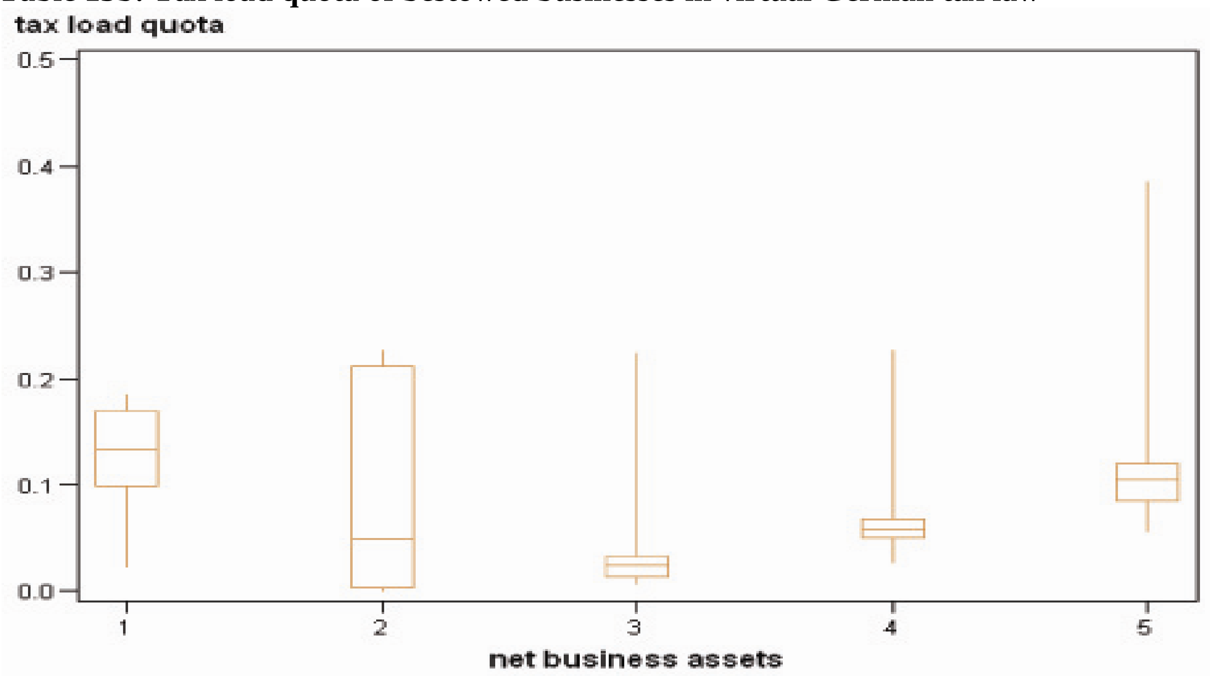


Table 13a reveals a distinctly higher tax load of bequeathed businesses in many cases than in former tax law. In particular businesses with a value up to 1,000,000 Euro (classes 1 to 3) face substantially higher tax load quotas. In addition tax load quotas over 10% happen in 39.4% of all cases and affect 46.3% of total business assets. Even tax load quotas over 15% are no curiosity as 27.79% of all businesses which possess 11.06% of total business assets are concerned. Even peak values over 30% affect 5 businesses. These rather high tax load quotas result in particular from the high tax rates in tax class II and III.

Table 13b: Tax load quota of bestowed businesses in virtual German tax law



The results for bestowed businesses are similar as for bequeathed businesses in net business assets class 2 and 3 as businesses worth up to 500,000 Euro are often passed to transferees in tax class II or III. The remaining businesses face, if that, only moderately higher tax load quotas in virtual tax law. This results in 21.6% of all businesses which possess 37.2% of total business assets facing a tax load quota above 10%. Furthermore 17.2% of all businesses with 8.4% of total assets are burdened above 15%. A tax load quota over 30% affects 9 businesses which incorporate 4.2% of total business assets.

Unfortunately the conclusions for the virtual inheritance tax are not as straightforward as for the former German inheritance tax. In contrast to the latter tax load quotas over 10% are not an exception in the virtual inheritance tax. Even higher tax load quotas are no curiosity. Relating tax load quotas over 10% to all transferred businesses relaxes the findings slightly as only 4.7% of all businesses face tax load quotas of this amount. But, as these businesses incorporate 27.6% of total business assets it can not been ruled out entirely that the virtual inheritance tax might cause some serious damage. As in particular the very high tax rates in tax class II and III are accountable for this outcome, alternative inheritance tax reform scenarios with lower tax rates could be taken into account.

6.4 Conclusion

The presented empirical results suggest that the enormous tax subsidies for businesses established by the German Inheritance Tax Reform Act 2009 are the result of successful lobbying, but can not be justified by the protection of businesses. The former German inheritance tax which also provided tax privileges for businesses, but to a far lower extent, burdens bequeathed businesses, if at all, only moderately. As bequeathed businesses are accompanied to a large extent by other assets most or even all of the inheritance tax liability does not burden business assets. Businesses which were transferred via donation in former inheritance tax law do not seem to be damaged by the tax. Otherwise entrepreneurs would have postponed the transfer of their businesses. As the bestowed businesses face moderate tax burdens the former German inheritance tax appear not as an obstacle for the donation of businesses.

The conclusion for a virtual inheritance tax with a broad tax base and lower tax rates, as considered in this contribution as an alternative to the current inheritance tax, is not so clear-cut. The considered virtual tax provides relatively high tax rates in tax class II and III as a result of assumed tax neutrality per tax class. Although far the most of all transferred businesses are not burdened by this virtual inheritance tax a small fraction faces relatively high tax burdens. As these businesses incorporate about one quarter of total business assets, inheritance tax induced damage can not be ruled out entirely.

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