example, the latter fact constitutes a prerequisite for the tax relief in the UK. In addition, the inheritor needs to continue the business after the receipt at least for a specific period of time in some countries (e.g. IT, NL). Beyond that, tax exemptions and reliefs for businesses may principally favour a typical sort of legal form, insofar as family businesses as well as business partnerships are preferred as compared to corporate enterprises (see OECD, 2016).

In Germany the exemptions with respect to business transfers are not restricted to a specific tax class and thus are independent of the relationship between bequeather and inheritor. In general, these exemptions and tax reliefs are clearly aimed at supporting the continuity of the business across generations. Potential negative impacts of an inheritance tax on business activities are addressed by Astrachan and Tutterow (1996). They point to negative impacts on investment decisions of companies due to an inheritance taxation, which may limit the growth of companies. Likewise, Brunetti (2006) explored the impact of the estate tax on business sales by using probate records for San Francisco. The estimation results suggest a positive effect of taxation on business sales. In contrast, Houben and Maiterth (2011) drew on data from German inheritance tax statistics as well as SOEP data and compared the German inheritance tax system with the former system with respect to privileges for bequeathed businesses. The former tax system generally allowed privileges to a lower extent. They concluded that there is no need for inheritance tax exemptions and reliefs for businesses in order to support the business continuation. Similarly, the German Wissenschaftlicher Beirat beim BMF (2011) argues that the inheritance tax relief in Germany is designed improperly to protect businesses. In 2016 a tax reform took place in Germany concerning the intergenerational transfer of businesses. Stricter regulations for business transfers were enacted as well as the reduction of tax-free amounts in case of enterprise values exceeding a certain threshold. Moreover, the allocation of inherited businesses to a larger number of persons is taxed at a lower rate than otherwise. However, the preferential treatment of family businesses is still criticised after the reform. The exemptions still constitute a complex system, where discrimination between assets types prevails (see Brauns and Schuler, 2016).

**Discrimination between asset types**

Finally, we find discrimination between specific asset types. In this respect, the bequest of family homes receives a preferential tax treatment in some countries. For example, in the UK a high tax-free amount is deductible if the inherited family home is transferred to the children. Likewise, a higher tax-free amount for family homes is applied to relatives in class I in Germany. Specifically, the family house is even tax-free for spouses/partners in case they use it. Moreover, agricultural and forestry assets are treated preferentially with respect to inheritance taxation in some countries (e.g. DE, FR).

**Evaluation of inheritance tax systems**

In order to compare systems of inheritance taxation, we need to evaluate the tax, based on meaningful criteria. Brunner (2014) generally argues for criteria, such as potential revenues, potential costs as well as distributional effects to evaluate an inheritance tax. In addition, Schratzenstaller (2015, 2013) suggests a list of evaluation criteria to assess and compare different property taxes. In the following we compare the inheritance tax regimes of our selection of countries applying the following criteria:

- **Individual’s response to inheritance and inheritance taxation**
Are there (un)favourable responses of individuals to the receipt of the inheritance as well as the imposition of the inheritance taxation? How do they occur in the different inheritance tax systems?

- **Distributional effects / Accuracy of taxation**
  What distributional impact does inheritance taxation offer? What are the differences concerning distributional effects between inheritance tax regimes across countries?

- **Actual tax revenue and potentials**
  How does the actual tax revenue differ between countries and what may be the revenue potential of inheritance taxation?

1. Individual’s response to inheritance taxation and inheritance

In general, the inheritance tax is regarded to be growth-compatible. Since the time of the intergenerational transfer is generally unknown, individual’s reactions to an inheritance tax seem to be limited (see Arnold et al., 2011). However, responses in the individual’s behaviour cannot be completely precluded. The literature distinguishes between responses in the behaviour of the prospective decedents and the heirs. In general, potential reactions might be changes in the savings behaviour as well as in the wealth accumulation behaviour. The tax might even result in the emigration of prospective bequeathers and potential heirs (see Schratzenstaller, 2013). In this respect, Bakija and Slemond (2004) analysed migration behaviour of rich individuals due to changes in estate taxation, using data for the United States from 1965 to 1998. The results suggest that there were movements of rich to regions with lower estate taxes, however the numbers were only small. They further underline negative net effects on tax revenues. The negative effect due to the tax reduction in a region could not be offset by the afflux of richer individuals to this particular region.

*Potential responses of prospective decedent on inheritance taxation*

The response in the behaviour of the prospective decedent is mainly determined by the bequest motive (see Cremer and Pestieau, 2011). These behavioural responses are mostly modelled and analysed in a theoretical framework while empirical evidence is scarce (an overview of analysis done see Kopczuk, 2013b). Is the inheritance related to a specific motive, such as altruism, joy of giving or even strategical, the inheritance tax is supposed to exhibit an impact on the decedent’s behaviour, potentially resulting in changes in the consumption as well as saving behaviour. Since these motives are strongly focused on the family, we can expect stronger behavioural changes when the recipients are closer relatives. In this regard, lower tax rates as well as tax exemptions for close relatives could dampen such an effect (see Cremer and Pestieau, 2011). Thus, this relationship favours inheritance tax systems where the relationship between persons is considered.

In addition, inheritance tax exemptions and reliefs for business assets may affect the behaviour of the prospective decedent. In this respect, tax privileges may divert investments towards certain business assets or influence the choice of the legal form of businesses, even though these options are less productive. This might also lead to inefficient tax planning activities. Furthermore, an inheritance tax privilege for family businesses may result in lower managerial quality, since the pool of potential managers is restricted to the managerial ability of family members (see Andrews and Westmore, 2014). Thus, tax privileges for family businesses are likely to result in lock in effects which prevent the realocation of capital (see OECD, 2016) and may induce biased investment decisions (see Wissenschaftlicher Beirat beim BMF, 2012).

A further direct response to inheritance taxation in general may refer to tax avoidance. Under a tax system where the degree of the relationship between bequeather and inheritor influences the actual
tax burden, tax avoidance might be more common. As we have already discussed, the tax can be principally levied on the total property of the decedent or on the inherited assets received by individual recipients. Thus, bequeathers could lower the tax burden by allocating the bequest to a larger number of recipients in case of an inheritance tax in the narrow sense.

Potential responses of heirs on prospective inheritance

Furthermore, the literature discusses potential behavioural responses caused by an inheritance. Not only the actual receipt, but even the expectation of an inheritance may already influence the behaviour of (potential) heirs.¹ A direct behavioural change of inheritance receipt is discussed by Holtz-Eakin et al. (1993) pointing to reduced tax revenues due to the so-called “Carnegie effect”. It describes the observable reduction in labour supply after the transfer, triggered by an increased capability to consume. There are three determinants for the magnitude of this effect: fixed costs of adjustment (i.e. cost for reduction in labour supply), age and family structure. The higher the amount of inherited wealth, the stronger the “Carnegie effect”, since fixed costs of adjustment are already covered. The magnitude of the effect correlates positively with the age of the recipient. Older individuals tend to react more sensitive to inherited assets, especially when they have high alternative income sources in non-work alternatives (e.g. early retirement schemes). Moreover, heirs without children and non-related heirs tend to respond with stronger reductions in labour supply. Bo et al. (2018) provide results on the negative impact of the “Carnegie effect” by using Norwegian administrative register data. They point out that progressive tax rates in general as well as a higher tax burden of non-relatives can mitigate the “Carnegie effect”. This favours again an inheritance tax system where the relationship between persons is implemented. Similarly, Kopczuk (2013a) argues that an inheritance tax is preferable over an estate tax, since it can influence the (negative) behaviour of heirs to a larger extent.

Moreover, Elinder et al. (2016) emphasise the role of different saving and consumption propensities across the wealth distribution. By using population-wide register data for Sweden, they found evidence that households at the lower part of the wealth distribution consume steadily more out of the inherited wealth over time. This further has implications on the evolution over time of wealth inequality (see below).

2. Distributional effects / Accuracy of taxation

The intergenerational transfer of wealth plays a major role for the accumulation of wealth as well as wealth inequality (see Leitner, 2016 and Humer et al., 2016). Thus, one of the main arguments for an inheritance tax is its potential equalising effect on the wealth distribution within a generation of heirs. However, the magnitude of the inequality-reducing effect of an inheritance tax depends crucially on the ability to levy the tax on wealthy individuals. Since wealth is typically highly concentrated, the accuracy of the taxation seems to be fulfilled. Moreover, the accuracy of an inheritance tax is more pronounced, the higher the tax free amount and the more progressive the tax rate (see Schratzenstaller, 2013).

As discussed above, inheritance tax systems can, inter alia, be characterised by the tax rate design as well as tax exemptions and reliefs. The tax rate design is typically determined by the relationship between the decedent and the recipient and/or the value of the assets. By applying a progressive tax rate the distributional effect of inheritance taxation can be increased. In contrast, the consideration of the relationship between persons allows only different fixed tax rates across tax classes. In this case, the distributional effect is totally limited to the kinship between the persons involved in the inheritance process. A combination of both determinants, however, means distinct average tax rates

¹ From a theoretical point of view, in case of a completely foreseen inheritance the behaviour has already been adjusted before the inheritance is actually received.
across and within groups. In those inheritance tax systems we thus find a double progressivity. When intergenerational transfers mainly occur within the close family, there is a lower progressivity in the tax rates in addition to a lower general tax level, limiting the equalising effect even further.

Tax exemptions are closely related to the determinants of the inheritance tax design. In countries where the relationship between individuals is irrelevant for the tax rate design, there are general tax exemptions which apply to all individuals. Tax-free amounts are further usually higher for close relatives. Especially the spouse/partner enjoys a higher tax-free amount or pays no tax, even in systems with an estate tax. Although higher tax-free amounts imply a higher progressivity in taxation, tax exemptions induce a weaker inequality-reducing effect, since intergenerational transfers tend to occur mainly within the close family.

Moreover, the basis of tax assessment might have an impact on the wealth distribution. There is an incentive to divide the inheritance and allocate the wealth to a larger number of individuals when the tax is levied on the recipients. The inherited wealth would be therefore broader distributed resulting in an equalising effect, especially in case of a highly-concentrated wealth at the top.

In order to assess the distributional effect of inheritances, Karagiannaki (2017) and Bönke et al. (2017) compare the wealth distribution with bequests to the wealth distribution without the bequests. As most other studies that apply this simple comparison they find a reduction in the relative wealth inequality, although the absolute wealth inequality increases. Inheritances are relatively more important for the accumulation of wealth for less wealthy households than richer ones. This approach, however, assumes that the total inherited wealth is saved and thus increases the wealth stock of individuals and households. Differences in the saving as well as consumption behaviour across the wealth distribution may however result in diverging outcomes (see Elinder et al., 2016). In principal, a higher marginal propensity to consume reduces the wealth stock over time. The direction of the distributional effect depends on the actual marginal propensities to save and to consume across the wealth distribution. Elinder et al. (2016) and Karagiannaki (2017) provide evidence that households at the lower part of the wealth distribution tend to reveal a higher propensity to consume out of the inherited wealth. Thus, wealth inequality is assumed to increase steadily over time with respect to inheritances.

3. Tax revenue potentials

The main determinants of the potential revenue of an inheritance tax regime are the definition of the inheritance tax base including exemptions and the dynamics of inheritance flows, behavioural responses of concerned individuals and the explicit tax rate design. A progressive tax rate generally implies a high tax revenue potential, especially in the context of highly-concentrated wealth. However, when the design of the tax rates also considers the relationship between bequeather and decedent, the progressivity and tax revenue potential are likely to be reduced. Moreover, tax exemptions influence the tax base and thus the potential revenue. In the case of an inheritance tax the bequeather may lower the prospective tax burden by allocating the bequest to a larger number of recipients. This might also result in a bias towards lower tax revenues as compared to an estate tax.

In order to shed light on differences in revenues of inheritance tax systems, we compare the tax income of selected countries as % of GDP over time. Obviously, in various countries there have been significant reforms in the inheritance tax regimes in operation, resulting in considerable changes of revenue potentials.

Figure 1 illustrates the evolution of inheritance and estate tax revenues in Finland, the Netherlands, Germany, France, the United Kingdom and the United States from 1965 to 2015 (US data for the estate tax are available only for 1970-1989 from the OECD, thereafter estate and gift tax is provided combined). In general, tax revenues are quite small, ranging between 0.05 and 1 % of GDP. The inheritance tax system in Finland, the Netherlands, France and Germany is characterised by a double progressivity (see Table 3 and Table 4), whereas a uniform flat rate is applied in the United Kingdom.
and a progressive rate based on the asset value only, in the United States. Both in the United States and the United Kingdom liberal tax reforms resulted in sharp drops in revenues until the end of the 1980s. In those countries applying double progressivity we observe an increasing trend in the revenue (relative to GDP) while almost constant revenues in the United Kingdom. In 2015, France, Finland and the Netherlands exhibit the highest inheritance tax revenues in our country sample. Their tax regimes are characterised by a strong progressivity across tax classes (see Table 4). This simple descriptive comparison between countries suggests that inheritance tax systems with a double progressivity tend to result in higher tax revenues over time as compared to differently designed regimes. Though, the actual tax revenue in the US and the UK also ranges at a high level.

The overall low rates of tax revenues are often used as an argument against inheritance taxation (see Brunner, 2014). However, since the overall wealth stock tends to increase in the long-run, an inheritance tax possesses a high tax revenue potential (see Schratzenstaller, 2013). Even when the tax-free amount is high, there are still tax revenue potentials due to the concentration of wealth (see Bach, 2016; Humer, 2014).

Figure 2 presents the net private wealth to net national income ratio for our group of selected countries. The ratio has continuously increased in all countries since the 1990’s. This implies that private wealth stocks have risen faster than GDP in these countries indicating a rising tax potential. The highest ratio features Italy, followed by the United Kingdom and France.
Figure 1: Inheritance & estate tax revenues (as % of GDP) in FI, NL, DE, FR, US and UK, 1965-2010.

Source: OECD database, own illustration.
Moreover, in Figure 3 we compare the actual inheritance tax revenue\(^2\) and the corresponding potential approached by the net private wealth to net national income ratio for France, Germany, the United States and the United Kingdom.\(^3\) These countries are generally characterised by different tax rate designs (see Table 3 and Table 4). France and Germany apply a double progressivity in the tax rate system, whereas the United States only considers the value of inherited assets as a determinant for tax rates. Contrary to this, we find none of the discussed determinants in the tax rate system of the United Kingdom. The French as well as the German system of inheritance taxation seems to make use of the growing potential accruing from the rising wealth-income ratio. In contrast, the regimes applied by the UK and the US lack of exploiting the increased wealth stock.

\(^2\) For the US we consider the inheritance and estate tax as well as the gift tax revenues combined.

\(^3\) Due to data limitations, we cannot show graphs for Italy, Denmark, Finland and the Netherlands.
Figure 3: Wealth-income ratio versus inheritance tax revenue (as % of GDP), 1965-2015