Investment returns and spending policies of European foundations – Evidence from the UK, Sweden, and Russia

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Preliminary draft, please do NOT quote

ABSTRACT

This paper adds to the literature on how foundations and endowments adjust their spending policies to fluctuations in their financial returns, in particular, during financial crises (Brown, et al. 2014; Dranove, et al. 2017; Rosen and Sappington 2019; Afik, et al. 2020). We contribute to the literature by focusing on financial decisions of European foundations from a comparative perspective.

We carry out an econometric analysis on data from three countries. We collected annual financial statistics for approximately 200 Swedish foundations, 200 Russian endowments and about 700 endowed foundations among the charitable organizations registered in the UK. The period covered by all three samples is 2007–2019.

In both the UK and the Russian sample, we find that spending rates are lower following higher than inflation investment returns while they are unaffected by lower than inflation returns. This asymmetric reaction of spending rates to investment returns is evidence of endowment growth as an objective, and does not support smoothing of expenditures, such as through simple moving average spending policies.

## Introduction

In this paper, we study the financial aspects of foundations and endowments. On the one hand, foundations make investment decisions. Many larger foundations have endowments – a capital stock whose financial returns can be spent on the foundation goals. Traditional investment in low-risk bonds have yielded near zero returns over the last decade, and foundations have often opted to invest a larger fraction of their portfolios into riskier assets, such as equity.

However, the stock market is volatile, whereas foundations have long-term goals, which would suggest rather smooth expenditures from year to year. The question then arises how foundations react to the volatility in investment returns. Do they spend less in bad years and more in good years or do they try to smooth out any shocks? This choice might be particularly acute in times of crisis: investment returns and perhaps also operating income of foundations are low while the need for spending stays constant or even increases. For example, during the recent corona virus pandemic, foundations in the health care sector and focusing on social welfare might have faced an increasing need for their services.

Endowed foundations often follow spending rules, which, however, are rarely formulated in public documents. Our analysis of accounting data can give some insight into spending rules of foundations and endowments. We also contribute to a policy discussion on the so-called endowment hoarding. Especially in the US universities have been accused of not spending enough to deserve tax benefits and accumulating funds instead.

Our data comes from three European countries: the UK (in particular, England and Wales), Sweden and Russia. We highlight some differences in the development of charity foundations in the three countries. Our data for the UK shows that only about 10 percent of the foundations have sizable endowments (more than half of their total assets), while in Sweden almost all foundations have endowments. In Russia, only a small fraction of foundations has endowments, and they are usually small in size. However, there is a segment of corporate and individual foundations that benefit from an implicit commitment of their founders (companies or wealthy individuals) to support the foundation on a long-term basis. So, for them, as for the endowments, we can ask a similar question of how the volatility in profits of the associated companies affects the foundations’ spending policies.

We find that most of the Russian corporate and individual foundations are not endowed but rely on regular donations from their founders and other donors. Therefore, we split the Russian sample to study the behavior of fundraisers and the endowed separately. All foundations in the Swedish sample are endowed, while only a small fraction of the larger charitable organizations in the UK are endowed. For all the three countries we build descriptive statistics and econometric models of their spending behavior.

Russian funds were strongly affected by the crises of 2009 (financial) and 2014 (the Crimea annexation), when foundation liquidations peaked. Since then, the pace of foundation creation and average fund size have decreased as foundations consolidated their assets. We find evidence of hoarding as opposed to smoothing when it comes to capitalization policies even in times of crisis, perhaps because endowments in Russia are still very young, and prioritize endowment growth over spending.

We find a strong impact of the 2008 crisis also in British and Swedish foundations, as well as a declining trend in their number, size and spending after 2016.

This paper contributes to the literature by focusing on financial decisions of European foundations. Not much research has been done in this field due to the diverse institutional backgrounds and data that is not always readily available. For instance, in Central and Eastern Europe, the landscape of philanthropy is only emerging and financial aspects have not yet been studied. In addition to our research question, the paper also gives a short overview of the foundations landscape in the three countries that we cover.

The paper is organized as follows. The next section gives an overview of the existing literature on investment returns and spending policies of foundations. In Section 3, we describe our data and methodology. Section 4 presents the estimation results of our econometric models and discusses them. Section 5 concludes.

## Literature review

Many consider endowed foundations as being able to be long-term actors providing a pluralistic alternative to the state and the market since they do not have to adapt to electoral whims and market fallacies (Prewitt, et al. 2006; Anheier and Leat 2013; Hammack and Anheier 2013). In order for endowed foundations to play this long-term role they need to safeguard their capital and act as prudent investors and refrain from behaving speculatively in financial markets (McQuillan and Davies 1975; Breeze 2008; Jenkins 2012). Indeed, many countries have legislation that prohibits foundations from jeopardizing their investments (e.g. the United States – see Schmalbeck (2004)).

Previous research has shown that endowed foundations often overlook the impact that asset management has on their grantmaking capabilities (Salamon 1992; Hamilton 2011). More so, endowments may generally have a rather limited knowledge about finance (Fraser and Jennings 2006; Breeze 2008). While committing capital they often exhibit a low risk tolerance and, thus, have low expectations of future returns on their investments (Salamon 1992; Meckstroth 1993; Salamon 1993; Arnsberger 1998; Fleishman 2007). Heutel and Zeckhauser (2014) find that larger and older foundations invest in riskier assets yielding higher returns, but these investments are also associated with higher management expenses. The literature states many reasons for these problems such as uninvolved boards, outdated investment policies and limited use of analytical tools (Salamon 1992) and that foundations are financially conservative (Fraser and Jennings 2006; Breeze 2008).

In managing their capital, foundations must solve at least two interrelated choice problems. One is about investing the foundation’s funds in some optimal way. Another is about the use of last year’s returns –namely, what amount should be re-invested and what should be paid out as grants. While the former problem is universal for all wealth managers, the latter problem is more unique for foundations, especially endowments. The two problems can be solved either separately or jointly (for a discussion see Brown and Tiu (2014)). Either way it is important to stress that the problem of choosing the amount of spending is essentially about the trade-off between current and future needs of foundation’s beneficiaries. The choice to be made should among other things respect the wishes and views of foundation’s donors, for example whether or not the foundation should exist in perpetuity (Deep and Frumkin 2001; Toepler 2004).

The optimal spending rule will of course depend on the assumed objective of the foundation. Literature on the topic has suggested several goals that may be pursued – see Hansmann (1990) and Qu (2021) for good reviews. The two most important theoretical models for a university endowment are those of Tobin (1974) and Merton (1993). The former suggests that endowment’s income is to be consumed with the goal of preserving equity among generations. An endowment should be managed in a way that it can continue supporting the same activities that it currently backs, without regard for other income prospects. The latter, different view treats endowment pay-outs as one of many revenue sources, which implies that endowment income should provide a hedge against the overall financial risk. In this case an endowment is a rainy-day fund.

From both cases it generally follows that the optimal spending rule should not vary over time, absent a substantial change in the institution circumstances (see also Woglom (2003)). However, the two views will lead to different implications for how endowments should spend in the face of adverse shocks, i.e. crises. On the one hand, protecting the real purchasing power of an endowment over time implies that spending should not be increased above a policy pay-out rate even during a financial crisis (Bowman 2007). Thus endowment pay-out rates should be of small magnitude and respond symmetrically to both positive and negative shocks to endowment returns (Gilbert and Hrdlicka 2015). An endowment with the objective of preserving intergenerational equity may adjust its annual pay-out rate according to changes in endowment returns but not to changes in operating income. On the other hand, under the model of a rainy-day fund, organizations would behave in a more conservative manner in good times for precautionary reasons, saving excessive returns, while quickly increase spending responding to negative income shocks (Conti-Brown 2011).

Legally the minimum or maximum use either of fund returns or of its principal may be directly restricted one way or another, in addition to the limitations imposed by the donor, which naturally affects how non-profits approach spending. For example, the Tax Reform Act 1969 in the USA compelled private foundations spend at least five percent of their assets each year on charitable purposes. In addition, a law was in place from 1972 that did not allow for spending from the so-called underwater funds, i.e. the ones whose assets are worth less than their original value at donation (Anderson 2019).

The introduction of the Uniform Prudent Management of Institutional Funds Act (UPMIFA) in 2006 removed the latter restriction and was enacted in all states by 2012. Differences in timing of enactment, combined with the prevalence of underwater funds after the financial crisis of 2008, led, for example, to large differences in spending constraints on otherwise similar university colleges. In particular, the colleges still bound by the previous law could not easily smooth out their spending in the face of the crisis, should their endowments find themselves underwater.

Meanwhile, in Russia, the federal law №275 «On the procedure for the formation and use of the target capital of non-profit organizations», first enacted in 2006, states that an endowed non-profit must spend at least 25% of the income accumulated on managed assets over the last three years. This minimum, currently less restrictive for the purposes of growing the fund, was introduced in 2000 in the midst of the Covid pandemic. Before that, the same law had restricted nonprofits to use at least 50% of fund’s income accumulated over two years. It is important that Russian nonprofits may treat as endowment’s income not only the returns on its assets but also up to 10% of the nominal value of the fund’s assets at the start of a fiscal year. In other words, the law encourages current spending and takes steps against hoarding of endowment returns. The potential reasons for such hoarding may vary – see *inter alia* Hansmann (1990), Conti-Brown (2011), Calabrese (2012), Brown, et al. (2014), and Qu (2021) for some insights.

Apart from possible legal stipulations regarding the level of spending, actual distributions out of funds may also be affected by other type of legislation, for example, taxes – for the US experience see Yoder, et al. (2011) and Yoder and McAllister (2012). In particular, the latter study provides compelling evidence that spending preferences of private foundations are driven by excises. In crisis years (e.g. years of severe natural disasters) when philanthropic need is particularly high, the excise tax rate structure creates disincentives for foundations to increase their distributions temporarily because they will likely pay higher taxes in future years.

Having possible restrictions in mind it is interesting to see what spending behavior foundations do actually exhibit. Empirical studies on endowment spending mostly cover institutions in North America, and predominantly focus on university endowments (e.g. Brown, et al. (2014); Brown and Tiu (2014); Rosen and Sappington (2019)). Sedlacek and Jarvis (2010) summarise major types of spending rules used by university endowments that are also applicable to other types of non-profits. Among university endowments the stated predominant approach is to smooth spending by taking a pre-specified percentage of the moving average of the past endowment market values (Commonfund 2018).

Generally, such a rule should result in spending surge during strongly rising markets that increase endowment market values and spending cuts during sharply or sustained falling markets that decrease endowment values (Qu 2021). However, Brown, et al. (2014) find that university endowments respond asymmetrically to contemporaneous positive and negative financial shocks. In response to positive shocks endowments tend to leave current payout unchanged – that is consistent with some smoothing rule being in place, – but following contemporaneous negative shocks, endowments actively reduce payout rates, which is inconsistent with smoothing and is rather indicative of hoarding.

Using largely the same data as Brown, et al. (2014), but a different definition for a financial shock, Rosen and Sappington (2019) find a symmetrical response to surprise changes in the value of a university’s endowment. In their analysis, a shock each year does not affect the amount paid out from the endowment in that year but has a substantial effect on the amount in the following year. The following year effects are comparable for both positive and negative shocks which is not consistent with the notion of endowment hoarding. Qu (2021) extends the analysis of spending behavior to the endowments of American schools, hospitals, and museums. The study identifies different patterns of spending, but generally does not find any empirical evidence that organizations use endowments as rainy-day funds.

For private foundations Yoder and McAllister (2012) show that their preferences with regard to current spending of assets are subject to change over the life cycle. Over time, as foundations become older and larger, they shift toward asset retention and away from current distributions. Such foundations tend to have sticky distribution policies, focus on maintaining stable distribution rates, and not increase spending in response to an increase in investment assets. The authors themselves state that their findings corroborate the view that older and larger funds exhibit tendency towards «empire building» in addition to philanthropy. However, the maintenance of stable distribution rates is rather indicative of a pursuit of smoothing in spending behavior.

In a simulation study Lindset and Matsen (2018) analyse four stylised spending policies that resemble approaches used in practice by endowments, foundations, and even sovereign wealth funds. They show that policies, aimed at smoothing the spending level by letting current spending be a function of both current asset values and earlier spending levels, may lead funds to be depleted (see also Afik, et al. (2020)). Thus, the choice of spending policy has a strategic importance for foundations, especially given the evidence, mentioned above, of their limited financial knowledge. The additional challenge for foundations is the succession of severe crises of various nature that have hit the world economy since 2008: the foundations now face both lower and uncertain returns on investments, as well as increased demand from their grantees.

Given such a background it is surprising that still there is rather scant empirical research on how grant-making philanthropic organizations behave when distributing their funds – with the exception of studies largely focusing on North American foundations and university endowments in particular. This paper adds to the literature on how non-profits respond financially to economic crises by offering a comparative perspective from the experience of foundations and endowments in Russia, Sweden, and the UK.

## Data and Methodology

## Data for the UK

The U.K. doesn’t have a legal foundation form and there is different national legal contexts in England, Northern Ireland, Wales and Scotland charity law (Breen, et al. 2009). This makes mapping exercises of the U.K. foundational landscape problematic and there are few comprehensive studies (Traynor and Walker 2015).

A study of the top 300 foundations in U.K. from 2016 state that the annual giving of the top 300 foundations is approximately £2.7 billion which stands for 15% of the total private giving in the U.K. About half of the foundation giving comes from the 20 largest foundations which makes the U.K. foundations sector being dominated by a few very large foundations. About a quarter of the top 300 foundations support educational issues, 11% support health issues and 11% support arts & culture making the U.K. foundation sector very diverse when it comes to what it supports (Pharoah, et al. 2016).

The U.K. data for this project comes from the Charity Commission which keeps a registry over foundations in England and Wales. Data on the area and field of operation and financial data for the last five years is available at the website of the Commission. In order to get data with a longer history we filed a Freedom of Information Act request and were able to get data going back to the year 2007.

There are approximately 250,000 unique foundations in the Charity Commissions register for England and Wales. However, only foundations with total income of more than 500,000 pounds need to report detailed accounting data, in particular, the size of their endowments and separate numbers for expenditures on charitable goals and administration of the foundation. The sample of such foundations consists of approximately 22,400 foundations. For the descriptive statistics that we present next, we concentrate on the subsample of endowed foundations.

* + 1. Descriptive Statistics for UK endowments

In our econometric analysis we focus on endowed foundations. We define them here as foundations whose endowment funds account for more than 50 percent of net assets (the value of all assets less liabilities). The number of endowed foundations ranges between around 500 in 2007 and 720 in 2018 and 2019. In 2020, the number went down to 660.

We observe in Figure 1 that after an initial drop and stagnation around the global financial crisis, the size of endowments has been growing, with a remarkably strong growth in 2020. In contrast, spending (Figure 2) has been affected little by the financial crisis and exhibits an upward trend throughout the sample period in the mean but stagnates for the median foundation. However, both in means and medians there is a remarkable increase in spending in 2020.

For endowments, we can also compute the rate of spending as a percentage of total assets at the beginning of the year. The time series of the spending rate for a median endowment is depicted in Figure 3. (The mean is not given here as it would be excessively affected by outliers at the upper end.)

We see that after an initial increase during the financial crisis, spending rates have been steadily declining and reached around 9 percent in 2020.

Finally, we report investment returns of endowed foundations in the UK. We compute investment returns as income from investments, such as dividends, interest payments and rents, plus capital gains or losses associated with the foundation’s investments. This total return is divided by the size of the endowment at the beginning of the year in order to obtain the rate of return that we use in the following graph. We report only the median values for each year since mean values are biased by outliers.

## Data for Russia

The Russian foundation sector has a long history starting in the Imperial period. The evolution of the sector was stalled by the Soviet era when the state took the role of private charities in providing support for educational, cultural and other initiatives solely from public resources. The upheavals of history have thus hindered the development of a large foundation sector. It has however seen a revival in the last 20 years with the growth in fundraising activities and the development of corporate and community funds. Still the Russian foundation sector is rather small remaining closely tied to the business sector (Jakobson, et al. 2018).

Foundations became legal entities according to Russian law in the mid-1990s with the introduction of the new civil code on nonprofit organizations and charitable activities. The emerging Russian philanthropy focused primarily on worthwhile social welfare, education, and cultural pursuits (Jakobson, et al. 2018).

There are few large-scale studies of the Russian foundation sector (for some exceptions see Kovalev 2015; Voronova and Kara, 2014) and estimations of the size and scope of the sector vary. One estimate of the Russian foundation sector by the mid-2000s puts the number of large foundations at around 30 entities distributing around the equivalent of $70 million in grants a year, and another estimate from the same period states that there existed around 75 larger foundations and several thousand smaller registered funds (Slocum, 2009). According to one report the annual budgets of 70 large private and corporate foundations averaged only $6 million in 2014 (Jakobson, et al. 2018).

These days the Interfax-SPARK database provides a comprehensive sample of Russian charitable foundations. We identify foundations by the Russian classifier of organizational and legal forms of ownership (Russian acronym OKOPF) «70400 (foundations)». As of July 2022, there were approximately 22,000 active foundations.

In our analysis, we work with two relatively small subsamples of this group of entities. The first subsample are the foundations that have entered the ranking of charitable foundations by the Russian rating agency RAEX Analytics. The agency has presented data for two rounds of this ranking, in 2020 and 2022 (which relied on accounting data for 2018 and 2020, respectively). The authors distinguish fundraising and corporate/individual foundations. The former pass current donations from a pool of predominantly small donors to finance project that serve the goals of the foundations, while the latter mainly rely on donations from its founder(s), a company, a wealthy individual or a small group of them. We focus on the corporate or individual foundations as long as the individuals receive their income mainly from active companies in Russia.

RAEX Analytics has set a lower threshold for a foundation’s revenue at 10 million rubles in 2020 and 5 million in 2022 and excluded some foundations in certain sectors (e.g., religious foundations). This leaves a sample of approximately 880 foundations, of which approximately 230 are corporate foundations.

Most of the foundations in Russia do not have endowments. There is, however, a small but emerging group of endowed foundations, which forms our second subsample for a deeper analysis. The list of them has been assembled by the National Association of Endowment Funds and comprises 184 endowments. According to the Interfax SPARK database apart from the aforementioned 184 there are only a few other endowments, which are currently inactive and do not have any accounting data. More than half of the endowments on our list are associated with educational institutions. Both subsamples, i.e. corporate foundations and endowments, allow studying the question of how the financial performance of invested funds affects the spending policies of a foundation. In this version of the paper, we limit our attention to the subsample of endowments.

* + 1. Descriptive Statistics for endowments

The 184 endowment funds in our sample roughly represent the universe of Russian endowments in 2021. We have data on total assets and the total value of equity. Both numbers are very close since the endowment funds in our sample have only very little debt in general.

Figures 5a and 5b show equity and total assets in terms of the means and medians for the period 2013-2021. We see that the mean size of equity increases by about 58 percent during the period. Except for the year 2016, this has been a steady process of growth. At the end of 2021, the mean endowment value was 318.4 million rubles (4.3 million USD). However, the median endowment becomes smaller by 38 percent, mostly due to the creation of new, smaller endowments.

Next, we report data on expenditures. Figures 6a and 6b display, the mean and median of total expenditures, respectively. As before, numbers are net of inflation, in 2013 constant rubles. Both series indicate a decreasing trend, at least since 2016. (stagnation)

The (effective) spending rate (expenditures as a fraction of total assets), shown in Figure 7, also shows a considerable decline, from about 12 percent in 2016 to 6 percent in 2021. This number is useful to compute only for endowments since other foundations have little assets and tend to spend out of current income.

Finally, we report the investment returns (gains from investments as a fraction of total assets). In Figure 8, we plot this information together with the annual returns on the stock index of the Russian stock exchange (MOEX) and a broad index of the Russian bond market in order to provide two benchmarks for investment returns had the endowment managers invested their funds mostly in the Russian bond and stock markets. In particular, we add data on the MOEX Russia Total Return Index (MCFTR), which includes both price gains and dividend payments of the largest Russian stocks, and the MOEX Russian Aggregate Bond Index (RUABITR), a total return index of the Russian government, municipal and corporate bond markets.

We see that investment returns have been overall declining since 2015. The returns are more aligned to the performance of the Russian bond market than to the stock market. In fact, investment returns of endowments are smoother than bond returns.

## Data for Sweden

Sweden has a long and rich history of foundations with the oldest Swedish foundation still in operation created in the early 16th century. Nowadays there exist some 17 000 larger public benefit foundations which function in a wide variety of fields and roles (Wijkström and Einarsson 2018). These 17 000 larger foundations manage a capital of approximately 25 billion euro, which is an increase of 80% of the amount that was managed ten years ago.

The majority of these foundations, approximately 11 500, are endowed grant-making foundations. They also manage the bulk of the capital within the sector, around 19 billion euro. However, there also exists around 2 500 operating foundations, which are schools, hospitals and research centers. Although statistics are scarce in this field and many changes have occurred as an effect of the new law on foundations, there are, according to earlier estimates, perhaps as many as 20 000 or 30 000 smaller foundations in Sweden in addition to these 14 000 larger foundations (Wijkström and Einarsson 2004; Wijkström 2007).

The bulk of the Swedish foundation capital is found in endowed foundations focusing on research. Those foundations manage assets of a book value of € 13.5 billion and the sector has also grown by over 70 % during the period between 2002 and 2012, when the last comprehensive study of the Swedish foundation sector was done (Wijkström and Einarsson 2018)

Apart from Research, the three largest fields of supported activity are Social Services, Education and Development & Housing. These areas are all within what can be seen as the core of the welfare state something which is of interest to note in the context of Sweden. We can also see that the area which has had the largest capital growth is the area of Culture & Recreation which up till 2014 was not tax exempt for Swedish foundations. Whether or not this growth was due to anticipation of the change in tax law, or whether or not the pace of growth will increase even further now when the area is tax exempt, remains to be seen and will be interesting to clarify in the future (Einarsson and Wijkström 2015)

Our Swedish data set consists of annual reports of 160 foundations from 2004 to 2019, in total about 2,500 files. These foundations were picked from a list of the 250 largest endowed Swedish foundations. Although there are about 17,000 foundations in Sweden in total, those 250 very large foundations represent well over 70 percent of the total foundation capital in the country. All of the foundations in the sample are mainly grant-making foundations. The majority of them fund research, education or social welfare activities and most of them are based in Stockholm, Gothenburg or Uppsala. Except for their size, this makes them representative of the Swedish foundation sector at large.

In Sweden foundations need to be registered with the County Administrative Board and must submit to it their annual report every year. The County Administrative Board keeps digital copies of annual reports from 2010, whereas older annual reports are deposited at the archives in paper form. We gained access to the digital copies by contacting the County Administrative Board directly, and paid site visits to the archives in order to obtain annual reports from 2004-2009 – those were photocopied digitally.

The annual reports where then converted into Excel-format with the help of an OCR software. This data material was further checked manually to create aggregated accounting concepts that would work for all foundations within the sample and across the time period studied. These concepts were then programmed into STATA scripts that which homogenizes the data set and makes statistical analyses possible.

## Econometric methodology

Our goal is to detect the dynamic relationship between investment returns in an endowment, on the one hand, and spending decisions, on the other. Therefore, our dependent variable is the share of spending on foundation goals as a percentage of total assets. (Total assets equal the endowment size plus any debt.)

The main explanatory variable is the investment return in the current and previous year. We also include the share of current contributions in total assets, the size of the foundation at the beginning of the year, endowment fixed effects and year fixed effects. The model is estimated as a fixed-effects panel model according to the following regression equation:

where *Spend* is the spending ratio, *Invret* the investment return, *Contrib* the share of current contributions in total assets, and *Size* is the natural logarithm of the endowment size at the beginning of the year (or the end of year *t-1*).

In an extension, we distinguish positive and negative investment returns. This allows us to detect asymmetric effects of returns on foundation spending in bad and good times. Since there is only a relatively small proportion of negative returns, we set the benchmark at the inflation rate (instead of zero), so effectively we are distinguishing positive and negative real returns. So we define

and

where *Infl* stands for the inflation rate and replace *Invret* in the regression equation with these two variables (both for the contemporaneous and lagged investment return).

Furthermore, we also test the same model with administrative expenditures as dependent variable. This is a test of whether any gains or losses from investment are absorbed first by the administrative expenses.

## Results

* + 1. Results for Russian endowments

In this section, we present the results of our econometric analysis of the spending decisions of Russian endowments. The main question we ask is how the spending rate depends on current and past revenues. In the case of fundraising foundations, such a question is somewhat ill-posed since fundraising efforts can be affected by spending needs, which would represent a reverse causation from spending to revenues. In contrast, in the case of endowments, revenue is composed to a large degree of returns to investments of the body of the endowment, and the returns in turn depend on the performance of financial markets. In this case it makes sense to study the question of how such exogenously determined investment returns affect the spending decisions of the endowed foundations.

In disbursing their earnings many foundations follow some version of a spending rule, which sets the policy spending amount to be a certain fraction of a moving average of revenues of the last few years. This would imply a positive effect of current and past investment returns on spending. Such rules make sense to smooth out spending in the presence of financial market volatility and assuming that spending needs are about constant.

Using our data on Russian endowments, we run linear regressions with endowment and year fixed effects, which absorb any time-invariant endowment-specific spending behavior and any macroeconomic (general time-series) effects on spending. Standard errors are clustered at the endowment level. Our estimation period reaches from 2013 to 2021, which includes the turmoil on the Russian financial markets in 2014 and the Covid crisis in 2020 (even though investment returns over the whole year of 2020 have been positive). To check for robustness in the relationship between returns and spending, we also run these regressions for sub-periods, namely from 2013 to 2018 and for 2019 to 2021. Variables have been winsorized at the 2nd and 98th percentiles to reduce the effect of outliers. The results are displayed in Table 1.

**Table 1. Estimation results for Russian endowments with the rate of spending on the goals of the foundation as dependent variable.**

|  |  |  |  |
| --- | --- | --- | --- |
|  | 2013-21 | 2013-18 | 2019-21 |
| Invret (t) | 0.350 | -0.726 | -0.628 |
|  | *(0.72)* | *(-0.91)* | *(-1.29)* |
| Invret (t-1) | -0.848\* | -0.432\*\*\* | -1.647\*\*\* |
|  | *(-1.80)* | *(-3.36)* | *(-2.86)* |
| Contrib | 0.653\*\*\* | 0.729\*\*\* | 0.720\*\*\* |
|  | *(7.66)* | *(7.28)* | *(7.49)* |
| Size (t-1) | 30.153\*\*\* | 3.486 | 65.353\*\* |
|  | *(3.38)* | *(1.15)* | *(2.58)* |
| Constant | -542.950\*\*\* | -48.378 | -1.2e+03\*\* |
|  | *(-3.39)* | *(-0.93)* | *(-2.54)* |
| Endowment FE | yes | yes | yes |
| Year FE | yes | yes | yes |
| Observations | 146 | 48 | 98 |
| Within *R*2 | 0.795 | 0.943 | 0.848 |

*t* statistics in parentheses

\* *p* < 0.10, \*\* *p* < 0.05, \*\*\* *p* < 0.01

We observe that the spending rate is negatively affected by the investment return in the previous years. The result is significant only at the 10 percent level. However, it is significant at the 1 percent level in the two subperiods and the coefficient in higher in absolute value in the later subperiod. There is, however, no statistically significant contemporaneous effect. We control for contributions to the endowment and the size of the endowment (total assets at the end of the preceding year), both of which have a positive effect on spending.

The negative effect of returns on spending rates is consistent with a moving average spending rule. While the policy spending rate (the fraction of the moving average endowment value) is constant, the actual (effective) spending rate (spending as percentage of current endowment value) changes over time. In particular, it is below the policy rate in rising markets when the endowment value is growing, and it is above the policy rate in declining markets, resulting in a negative relationship between returns and actual spending rate.

However, such a negative relationship may also be driven by endowment hoarding: the accumulation of capital in order to increase the size of the endowment at the expense of current spending. This problem has been the center of a policy debate around foundations in the US, specifically whether or not their tax exemption status in the country is justified. In the Russian case, endowment hoarding would be more likely linked to the wish of endowment managers to increase the value of the still relatively small endowments living through their initial stage of wealth accumulation.

Empirically, the endowment hoarding hypothesis can be distinguished from the moving-average spending rule by differentiating between the instances of positive and negative returns. Lower actual spending rates should occur only after positive returns in the case of the endowment hoarding hypothesis but not after negative returns. In the case of the moving average spending rule, the effect would be symmetric. As explained in Section 3.4., we distinguish therefore between positive and negative returns. Our benchmark is, however, not the zero return but rather the rate of inflation, such that we basically distinguish between positive and negative real returns. The results for the full time period and our two sub-periods are given in Table 2.

**Table 2. Estimation results for Russian endowments with the rate of spending on the goals of the foundation as dependent variable, allowing for an asymmetric reaction to positive and negative (real) investment returns**

|  |  |  |  |
| --- | --- | --- | --- |
|  | 2013-21 | 2013-18 | 2019-21 |
| Invret\_pos (t) | -0.092 | -2.477\*\*\* | -0.998 |
|  | *(-0.18)* | *(-4.71)* | *(-1.38)* |
| Invret\_neg (t) | 1.896 | -12.941\*\*\* | 2.027 |
|  | *(1.01)* | *(-13.80)* | *(0.69)* |
| Invret\_pos (t-1) | -1.039\* | -0.547\*\*\* | -1.969\*\* |
|  | *(-1.80)* | *(-7.30)* | *(-2.32)* |
| Invret\_neg (t-1) | 1.483 | 4.674\*\*\* | -1.804 |
|  | *(0.89)* | *(4.70)* | *(-0.23)* |
| Contrib | 0.656\*\*\* | 0.751\*\*\* | 0.719\*\*\* |
|  | *(7.74)* | *(42.38)* | *(6.65)* |
| Size (t-1) | 29.001\*\*\* | -2.466\*\* | 58.668\* |
|  | *(3.29)* | *(-2.48)* | *(1.87)* |
| Constant | -516.369\*\*\* | 53.004\*\*\* | -1.0e+03\* |
|  | *(-3.23)* | *(3.08)* | *(-1.83)* |
| Endowment FE | yes | yes | yes |
| Year FE | yes | yes | yes |
| Observations | 146 | 48 | 98 |
| Within *R*2 | 0.802 | 0.987 | 0.851 |

*t* statistics in parentheses

\* *p* < 0.10, \*\* *p* < 0.05, \*\*\* *p* < 0.01

We see that the negative effect of past investment returns stems entirely from positive returns. This means that endowments are not just smoothing their spending (for example, by following moving average spending rules) but that they use positive returns to build up the endowments. During crisis times, when returns are negative, no shrinking of endowments is happening. On the contrary, endowment managers try not to change the effective spending rates after negative (real) returns.

In an untabulated regression, we test whether the negative effect of past positive investment returns on spending rates happens in certain years. In particular, we are interested whether the Covid year 2020 is different from other years. This is not the case – the year 2020 was not different from any other in terms of the reaction of endowment spending to past investment returns.

About two thirds of Russian endowments are active in the field of education. In many cases they provide more or less sizeable contributions to the budgets of universities and schools. We study whether the relationship between returns and spending is different in educational endowments compared to the rest of the sample. It turns out that the negative effect of past investment returns is present in both groups of foundations.

Finally, we ask whether investment returns affect not only spending for the established goals of the foundations but also the administrative expenses. A positive effect of returns on administrative spending would speak to agency problems in foundations since they use windfall gains to increase administrative expenses, such as salaries, office rents and equipment, marketing, etc.

**Table 3. Estimation results for Russian endowments with the rate of spending on administrative purposes as dependent variable, allowing for an asymmetric reaction to positive and negative (real) investment returns**

|  |  |  |
| --- | --- | --- |
|  | (1) | (2) |
| Invret (t) | 0.034 |  |
|  | *(0.56)* |  |
| Invret (t-1) | -0.070\* |  |
|  | *(-1.88)* |  |
| Invret\_pos (t) |  | -0.053 |
|  |  | *(-0.58)* |
| Invret\_neg (t) |  | 0.482 |
|  |  | *(1.66)* |
| Invret\_pos (t-1) |  | -0.092 |
|  |  | *(-1.51)* |
| Invret\_neg (t-1) |  | 0.108 |
|  |  | *(0.33)* |
| Contrib | 0.018\* | 0.018 |
|  | *(1.73)* | *(1.65)* |
| Size (t-1) | -4.498 | -4.651 |
|  | *(-1.61)* | *(-1.63)* |
| Constant | 83.221\* | 86.953\* |
|  | *(1.68)* | *(1.71)* |
| Endowment FE | yes | yes |
| Year FE | yes | yes |
| Observations | 187 | 187 |
| Within *R*2 | 0.192 | 0.205 |

*t* statistics in parentheses

\* *p* < 0.10, \*\* *p* < 0.05, \*\*\* *p* < 0.01

Comparing the magnitude of the coefficients in this table to the ones for spending on foundation goals presented in Table 1, we observe that the effect of investment returns on administrative spending is much smaller. Following positive returns, the rate of spending on administrative purposes is almost invariant to the magnitude of investment returns. Therefore, in this test we do not find strong evidence of agency problems in endowment spending.

* + 1. Results for UK endowments

In this section, we provide results of a similar analysis of the spending behavior of British endowed foundations. We tried to keep the variable definitions as similar as possible such that cross-country comparisons can be made. The sample of UK endowments is larger and overall more representative of the whole foundation sector. This stands in contrast to Russia where the largest and most prominent foundations generate their main income from fundraising or regular transfers from companies or wealthy individuals. We define a UK foundation to be an «endowment» if the size of its endowment is larger than 50 percent of the total equity on the foundation’s balance sheet.

In Table 4, we report the results of econometric analysis for UK endowments. The dependent variable is the rate of spending on foundation goals (charitable expenditure) as a fraction of total assets at the beginning of the year. The main explanatory variables are the contemporaneous and one-year-lagged returns to investments of the endowment, net of inflation. In the right column we distinguish between the positive (i.e., above inflation) returns and the negative (below inflation) returns.

**Table 4. Estimation results for UK endowments with the rate of spending on foundation goals as dependent variable, allowing for an asymmetric reaction to positive and negative (real) investment returns**

|  |  |  |
| --- | --- | --- |
|  | (1) | (2) |
| Invret (t) | -0.238\*\* |  |
|  | *(-2.05)* |  |
| Invret (t-1) | 0.082 |  |
|  | *(1.63)* |  |
| Invret\_pos (t) |  | -0.288\* |
|  |  | *(-1.93)* |
| Invret\_neg (t) |  | -0.031 |
|  |  | *(-0.16)* |
| Invret\_pos (t-1) |  | 0.065 |
|  |  | *(1.01)* |
| Invret\_neg (t-1) |  | 0.086 |
|  |  | *(0.59)* |
| Contrib | -0.016 | -0.016 |
|  | *(-0.09)* | *(-0.09)* |
| Size (t-1) | -27.331\*\* | -27.450\*\* |
|  | *(-2.08)* | *(-2.09)* |
| Constant | 494.308\*\* | 497.105\*\* |
|  | *(2.19)* | *(2.20)* |
| Endowment FE | yes | yes |
| Year FE | yes | yes |
| Observations | 5881 | 5881 |
| Within *R*2 | 0.067 | 0.067 |

*t* statistics in parentheses

\* *p* < 0.10, \*\* *p* < 0.05, \*\*\* *p* < 0.01

The results show that the rate of spending on foundation goals responds negatively to contemporaneous investment returns. A one percentage point higher investment return lowers the spending rate by 0.24 percentage points. For the median endowment with a spending rate of about 9 percent this is a reduction in the spending rate by 2.7 percent which is economically significant.

Our qualitative result of a negative impact of investment returns on spending rates may be a reflection of both moving-average spending rules and endowment hoarding. Specification 2 shows that this negative effect is entirely due to positive (above inflation) returns, which supports the hoarding hypothesis.

This result is similar to the one obtained for the sample of Russian endowments. The difference is that the effect is contemporaneous in the UK data and lagged by one year in the Russian data. This might be due to our treatment of financial reports of UK foundations whose accounting year does not coincide with the calendar year. In about 45 percent of the UK endowments, the accounting year ends in March or April, and we treat them as reports for the previous year. This may explain why the effect of returns on spending appears as contemporaneous in our econometric result while happens with a lag of at least a few months in reality. In future research, we will try to account for the different accounting year periods in a more granular way.

Another interesting result is that spending rates are generally higher in smaller endowments than in larger ones. The number of observations in our regressions is much higher than in the Russian case, which gives us more confidence in the results obtained. The estimations involve 865 unique endowed foundations, with seven years of data on average.

We also investigate whether similar effects of investment returns are present in the spending patterns for administrative purposes. Results are summarized in Table 5.

**Table 5. Estimation results for UK endowments with the rate of spending on administrative purposes as dependent variable, allowing for an asymmetric reaction to positive and negative (real) investment returns**

|  |  |  |
| --- | --- | --- |
|  | (1) | (2) |
| Invret (t) | -0.026\* |  |
|  | (-1.86) |  |
| Invret (t-1) | 0.036\*\*\* |  |
|  | (3.20) |  |
| Invret\_pos (t) |  | -0.052\*\*\* |
|  |  | (-2.91) |
| Invret\_neg (t) |  | 0.064 |
|  |  | (1.43) |
| Invret\_pos (t-1) |  | 0.037\*\* |
|  |  | (2.45) |
| Invret\_neg (t-1) |  | 0.008 |
|  |  | (0.22) |
| Contrib | -0.020\*\* | -0.020\* |
|  | (-1.97) | (-1.96) |
| Size (t-1) | -2.732\*\*\* | -2.785\*\*\* |
|  | (-2.67) | (-2.75) |
| Constant | 53.172\*\*\* | 54.367\*\*\* |
|  | (2.99) | (3.08) |
| Endowment FE | yes | yes |
| Year FE | yes | yes |
| Observations | 5882 | 5882 |
| *R*2 | 0.022 | 0.023 |

*t* statistics in parentheses

\* *p* < 0.10, \*\* *p* < 0.05, \*\*\* *p* < 0.01

The results show that investment returns have a negative contemporaneous effect on administrative expenditures as well. In addition, there is a lagged positive effect. Both effects are entirely due to positive real returns. So it seems that spending is not adjusted to higher returns immediately but it grows with positive returns with a lag of about one year. Among other results we find it should be noted that direct contributions lower the rate of spending on administrative purposes, such expenditures are relatively smaller in larger endowments.

## Conclusions

In this paper, we have provided descriptive statistics and econometric results on the spending behavior of foundations from three European countries – the UK, Sweden and Russia.

In the current version of the paper, we focus our empirical analysis on endowed foundations in the UK (England and Wales) and Russia. We plan to add data for Scotland, as well as for Sweden.

For endowed foundations in Russia, we can see that after an initial drop and stagnation around the global financial crisis, the size of endowments has been growing, with a remarkably strong growth in 2020. Spending has however had an upward trend throughout the sample period with a remarkable increase in spending in 2020.

It this seems that even though the capital growth of U.K. endowed foundations was hurt by the financial crises of the period their spending has increased in absolute value over the whole period, strengthening the thesis that foundations smooth their spendings over longer time periods.

In both the UK and the Russian sample, we find that spending rates are lower following higher than inflation investment returns while they are unaffected by lower than inflation returns. This asymmetric reaction of spending rates to investment returns is evidence of endowment growth as an objective, and does not support smoothing of expenditures, such as through simple moving average spending policies.

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