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The Role of Endowments in Financial Markets: Key Trends in 1990–2020 in the USA (on the example of the US education sector)

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ABSTRACT

This article describes the key trends in the development of endowments as institutional investors using the example of US educational endowments in 1990–2020. The paper also gives an overview of the world structure of endowments assets by regions and sectors. Although much research has been done on investment behaviour and return of endowments, there are not so many works analysing the long-term trends in the development of endowments. The study uses methods of systemic and comparative analysis and statistical methods. The article demonstrates an intensive growth of endowment assets during 1990–2000 and the following maturing market. Special attention is given to identifying and analysing changes in the structure and concentration levels of the endowment's market. The author suggests that the earlier model of many different-sized funds has changed to the model where significant funds dominate and concentrate most assets. The paper also explains the changes in the investment behaviour of endowments, including how the size of endowment influences the asset structure of funds' investment portfolios and return. The paper shows the growing role of state universities endowments, an increase in the regulatory burden. Also, it presents some forecast of key trends in the development of endowments in the long run.

Keywords: endowment fund; endowment; investment portfolio; asset structure; return; spending rate; regulation of endowments

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INTRODUCTION

Endowments (endowments-fund)[1] — relatively large institutional investors in the securities market, with assets of about 1.4 trillion USD or 1.5% of global assets managed.[2] There is a high regional concentration of endowments — in 2018 the U.S. accounted for almost 60% of the assets of the world endowments, in Europe — 37% [1]. Of the world's 100 largest endowments (870 billion USD), the share of United States funds is 91%, endowments Saudi Arabia — 3%, Europe — 3%, Canada — 2% and Hong Kong — 1%.[3] By industry structure, universities (76% of the assets of foundations in the top-100) and religious organizations (18%) dominate the market in the field of endowments, followed by charitable and other social organizations — 6%.[4]

MARKET SIZE AND MARKET DYNAMICS IN THE USA

Endowments of colleges and universities, accounting for only 6% of all non-profit organizations in the USA, are among the largest institutional investors [2]. In 2015, colleges and universities in the USA accounted for more than 50% of the assets of non-commercial businesses; the following are the main categories of endowments: school, arts and cultural, health, public and social benefit [3].

Between 1990 and 2019, the assets of universities and colleges in the United States increased more than tenfold to 643 billion USD, and the number of funds[5] — doubled (*table 1,* see *figure*). The fastest-growing endowments were 1990–2000 (average 15% per year), including high returns on investment (*table 2*).

MARKET STRUCTURE AND CONCENTRATION

The market for endowments in 1990–2018 remains highly concentrated. In 2018, 70% of colleges and universities in the United States established an endowments, with 30% of such institutions (included in the NACUBO report) accounting for 95% of the assets of all endowments in the USA (in 1991 the ratio was similar — 60% of institutions have created an endowments, and in 20% of funds — 88% of assets).[6] In turn, asset concentration is also quite high: in 2018, top-10 NACUBO funds[7] had 35% (in 1990–37%) and top-100–75% of the assets of all the endowments.

In 1990, there were many multiple funds with assets up to 500 million USD (94% of all funds by number) provided half of the assets of all of the endowments, and the other half was made up of a small number of large and very large funds with assets of over 500 million USD (6%). By 2000, the market structure had changed — with the largest funds dominating

[1] Funds generated by non-profit organizations through donations and channeling the proceeds of their investment to charitable purposes. Recipients include universities, schools, hospitals, museums, theatres, libraries, etc. The endowments generally benefit from tax breaks (for donors and recipients of funds, as well as for investment income).

[2] Data on global assets managed for 2017. Value of Assets under Management Worldwide in Selected Years from 2002 to 2017. Statista 2019.

[3] Top-100 Largest Endowment Rankings by Total Assets. SWFI. URL: https://www.swfinstitute.org/fund-rankings/endowment.

[4] The top-100 list includes 5 religious endowments that are among the largest in the world of endowments [for example, it is estimated that the Mormon Church in the United States (The Church of Jesus Christ of Latter-day Saints) the fund is 124 billion USD, the Anglican Church has 8.3 billion pounds and others].

[5] The number of universities and colleges participating in the NACUBO Endowment Study, is considered, as an educational institution may have several endowments (funds).

[6] Accounted for: 1) total number of colleges and universities in the USA (not-for-profit) according to data NCES — 3216 in 1991 and 3781 in 2018 r. (Educational Institutions. NCES. URL: https://nces.ed.gov/programs/digest/ d19/tables/dt19_105.50.asp); 2) total number of colleges and universities with endowments according to data NCES in 1991 and 2018–1956 and 2695, assets of their endowments (data IPEDS, Finance (Fiscal year 2018). URL: https://nces.ed.gov/ipeds/datacenter/DataFiles.aspx?goToReportId=7); 3) data NACUBO — 367 and 802 colleges and universities (NACUBO Endowment Study 2018).

[7] Of the top-10 fund assets, Harvard University — 38,3 billion USD, University of Texas — 30,8 billion USD, Yale University — 29,3 billion USD, and other — NACUBO Endowment Study 2018.

Table 1

Assets and number of colleges and university endowments in the USA, 1990–2019

Indicator/Year	1990	1995	2000	2005	2010	2015	2018	2019
Endowments assets, billion USD	60.1	102.5	241	298.9	346	529	616	643
Number of endowments, pcs.	367	460	568	753	850	812	802	774

Source: compiled by the author based on URL: https://www.nacubo.org/Research/2020/Public-NTSE-Tables.

* Here and further in reference to the NACUBO Endowment Study reports it is necessary to take into account that for 1992-2008 NACUBO reports included data not only for the USA, but also endowment-fund by the University of Canada. However, during this period, the share of Canada's funds was small, rising from 0.4 to 1.2% of the assets of all United States and Canadian businesses from 1992 to 2008, and the share of Canadian funds increased from 2 to 6%.

Table 2

Some indicators of endowments development in the USA, 1990–2019

Indicator/Year	1990–1995	1996–2000	2001–2005	2006–2010	2011–2015	2016–2019
Average rate of growth of assets, %	11.1	18.7	4.7	4.5	9.1	5.1
Average return, %	10.3	15.9	3.6	3.6	9.7	6.0
Average rate of expenditure, %	5.0	5.4	5.1	4.5	4.4	4.4

Source: compiled by the author based on URL: https://www.nacubo.org/Research/2020/Public-NTSE-Tables.

by assets (75% of all assets, 15% by number) (*table 3, 4*).

From 2000 to 2015, this trend is only growing, with large funds continuing to hold more and more assets. By 2019, the number of funds with assets in excess of 500 million USD had increased almost 9 times — from 22 to 190[8] (total number of funds — only twice), their share by number increase to 24%, by assets — to 88%. At the same time, market development was quite uneven, and funds — "billionaires" grew faster, concentrating more on themselves the assets of the industry. For example, between 1990 and 2019, the share of funds with assets in excess of 1 billion USD increased from 38% to 78% of the assets of all businesses, and the number increased tenfold (from 11 to 108 funds[9]), the share of all other asset groups increased from 3 to 14%, while the share of all other asset groups decreased exponentially and the number of funds grew much more slowly (*table 3, 4*).

On the one hand, such changes in market structure and concentration partly confirm the prevailing perception of American endowments, according to which "the richest funds become even richer" [4], concentrating on oneself donations and the assets of the endowments.[10]

On the other hand, the market model as a whole has also been transformed by the growing assets of small and small funds. In particular, the following changes have occurred in the market structure: a) "layer" small funds with assets significantly reduced to 25 million USD (their share by number decreased from 27% to 8% in 2019); b) the most numerous became the group of medium-

[8] Compiled by the author based on URL: https://www.nacubo.org/Research/2020/Public-NTSE-Tables.

[9] Compiled by the author based on URL: https://www.nacubo.org/Research/2020/Public-NTSE-Tables.

[10] Moody J. The Rich Get Richer: Harvard Capital Campaign Raises $ 9.6 Billion. — Forbes. — September 2018; Corn M. For U.S. Universities, the Rich Get Richer Faster. — The Wall Street Journal. April 2015.

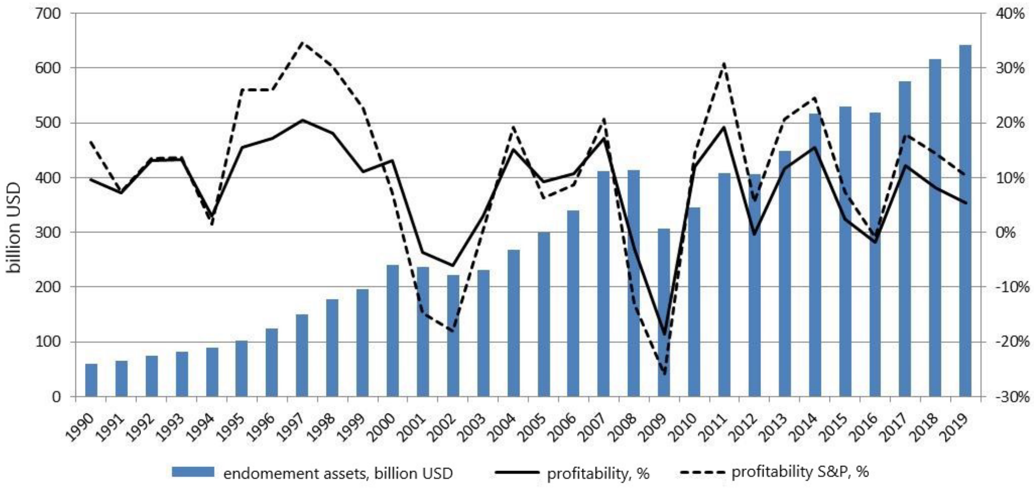

Fig. **Assets and investment return of endowments in the USA, 1990–2019**

Source: compiled by the author based on: URL: https://www.nacubo.org/Research/2020/Public-NTSE-Tables.

Table 3

The total market value of endowments by the size of endowment in the USA, %

<table>
<tr><th>Endowments size / Year</th><th>1990</th><th>1995</th><th>2000</th><th>2005</th><th>2010</th><th>2015</th><th>2019</th></tr>
<tr><td>Over 1 billion USD</td><td>38.4</td><td>42.9</td><td>60</td><td>65.1</td><td>66.2</td><td>74.7</td><td>78.3</td></tr>
<tr><td>Between 501 million and 1 billion USD</td><td>12</td><td>13.4</td><td>15.0</td><td>12.4</td><td rowspan="2">28</td><td>10.5</td><td>9.4</td></tr>
<tr><td>From 101 million to 500 million USD</td><td>33.6</td><td>32.3</td><td>20</td><td>17</td><td>11.3</td><td>9.9</td></tr>
<tr><td>From 25 million to 100 million USD</td><td>13.6</td><td>10.3</td><td rowspan="2">5.0</td><td>5</td><td rowspan="2">3</td><td>0.8</td><td>2.4</td></tr>
<tr><td>Up to 25 million USD</td><td>2.4</td><td>1.2</td><td>0.6</td><td>0.3</td><td>0.2</td></tr>
<tr><td>Total, %</td><td>100</td><td>100</td><td>100</td><td>100</td><td>100</td><td>100</td><td>100</td></tr>
</table>

Source: compiled by the author based on URL: https://www.nacubo.org/Research/2020/Public-NTSE-Tables.

Table 4

Total number of endowments by the size of endowment in the USA, %

Endowments size / Year	1990	1995	2000	2005	2010	2015	2019
Over 1 billion USD	3	3.7	7.2	7.4	7.1	11.6	13.9
Between 501 million and 1 billion USD	3	4.3	8.3	7.2	7.8	9.5	10.6
From 101 million to 500 million USD	24.8	30.9	37	30	26.6	32.1	36.2
From 25 million to 100 million USD	42	42.4	35	37.2	36.9	35	31.5
Up to 25 million USD	27.2	18.7	12.5	18	21.6	11.8	7.8
Total, %	100	100	100	100	100	100	100

Source: compiled by the author based on URL: https://www.nacubo.org/Research/2020/Public-NTSE-Tables.

sized funds with assets from 100 million to 500 million USD (their number increased from 90 to 280 funds[11]), and the group of small funds (from 25 million to 100 million USD) stopped being the most numerous (*table 4*). Given that after 2010 the increase in the number of endowments has stopped (see *table 1*) in the context of increasing competition in higher education,[12] these changes indicate a consolidation, "rising" funds and moving them to the following larger categories, and thus — about the increase of "maturity" of the market and some "saturation" of its endowments.

MARKET STRUCTURE BY TYPE OF INSTITUTION

Private education endowments dominate the market, they're more, and on average they're bigger. According to NACUBO, private funds, which account for 62% of all endowments, account for 68% of all endowments assets (*table 5*), In the full US higher education sample (according to IPEDS) Private institutions provide 50% of endowments by number of funds and 68% by assets.[13] But since 1990 their number and share in assets have been gradually decreasing, due to the development of endowments state institutions (see *table 5*).[14] For example, between 1990 and 2015, the assets of endowments public research universities increased by a factor of 7, and private non-profit research universities and colleges grew of 5 and 3.5 times [2]. In addition, in 2018, the top 10 endowments include 3 government agencies,[15] which account for 22% of the assets of the first ten funds and 8% of all funds.

The upward trend in endowments of public universities was also reflected in the narrowing of the gap between them and private foundations in "Assets endowments per student".[16] In 1990, private and public endowments amounted to 48.8 and 4.2 thousand USD (11 times difference), and in 2017, respectively, 183 and 27 thousand USD (8,4 times difference).[17]

ROLE OF ENDOWMENTS

Endowments are an important source of funding for educational institutions, where payments from them cover, on average, up to 10% of their operating budget[18] (for major endowments with assets over 500 million USD — to 15–17%, for funds with assets less than 25 million USD — about 5% of budget[19]). Average payments[20] are no more than 5% of endowments assets per year, while higher

[11] compiled by the author based on: URL: https://www.nacubo.org/Research/2020/Public-NTSE-Tables.

[12] Between 1999 and 2018, the total number of colleges and universities in the USA increased by 1.5% to 6.5 thousand, with a 20% increase in the number of public four-year institutes, a 4% increase in private ones, and a 13% decrease in the number of two-year colleges. By 2013, the number of private commercial institutions had grown rapidly, from 37% to 47% of all schools, this meant that the maximum number of colleges and universities in the USA was reached in 2012–2013 (7,5 thousand). Since 2014, the number of private institutions has been declining (up to 41% by 2018) due to lack of funding, decreasing number of students, competition with public and private non-profit institutions. Compiled based on URL: https://nces.ed.gov/programs/digest/d19/tables/dt19_105.50.asp.

[13] compiled by the author based on: URL: https://nces.ed.gov/ipeds/datacenter/DataFiles.aspx?goToReportId=7.

[14] In 1999–2018, the proportion of public colleges and universities (out of all non-commercial degree-awarding institutions) held at 50%, but the proportion of public 4-year-old institutions (out of all 4-year-old non-commercial diploma-awarding institutions) increased from 28 to 32%, the predominance of public 2-year colleges (90% of all 2-year non-profit colleges) also continues. Compiled based on: URL: https://nces.ed.gov/programs/ digest/d19/tables/dt19_105.50.asp.

[15] Of these, 2 are the largest integrated public universities — The University of Texas System and The Texas A&M University System).

[16] Endowment Value per Full-Time Enrollment Student — Assets endowments, corresponding to one full-time student.

[17] NACUBO Endowment Study 1990; for 2017 — compiled based on NACUBO Endowment Study 2017.

[18] U. S. Educational Endowments Report 8,2 Percent Return in FY 18. NACUBO-TIAA Press Release. January 31, 2019.

[19] NACUBO Endowment Study 1990–2018.

[20] As a general rule, the actual amount paid is based on the spending rate — a predetermined percentage of the market value of the endowments calculated on the basis of a moving average or determined annually.

Table 5

The share of private endowments in the total market value and number of endowments in the USA, %

Indicator / Year	1990	1995	2000	2005	2010	2015	2018	2019
Number of private endowments, % of total number of funds	72*	69	66	69	64	63	62	62
Assets of private endowments, % of assets of all funds	81	74	73**	72	71	63	67	68

* – data on 1991 г.; ** – data on 1999 г.

Source: compiled by the author based on URL: https://www.nacubo.org/Research/2020/Public-NTSE-Tables.

payments are typically found in large funds.[21] Almost 50% of the payments are allocated to student finance, the remainder to academic programmes, university departments and campus management.[22]

Average endowments expenditure decreased from 5–5.5% to 4.4% in 1990–2019 in USA (see *table. 2*), that, with the overall decline in profitability and increased competition in the United States education market,[23] creates a higher level of financial burden on endowments, increases their relevance to the institution.

For private institutions, especially colleges, endowments tend to be more important. In 2018, their assets averaged 1.7 times the total annual expenditure of the institutes, for the public universities — they accounted for about 30% of their annual budgets.[24] For institutions with the largest endowments, the figures are higher — 4.37 for private and 1.85 for public institutions.[25]

The rate of growth of the assets of the funds relative to the expenditures of the institutes depends on the type of institution. For example, in 1990–2005, the endowments of private universities (for private colleges — only until 1995) grew faster than their spending (the same dynamic holds, for example, for the group of universities with doctoral programs[26] [5]), in 2005–2015 — slower. In public institutions, fund assets grew faster than institutional spending throughout the period 1990–2015 (after 2005 — small differences) [2]. As a result, in 1990–2015, indicators "Ratio of endowments assets to total expenditures of institutions" have grown in both private and public universities (*table 6*), although this indicator for private universities was significantly diluted in the 2008–2009 crisis and has not fully recovered. So, for example, in Harvard, the rate rose from 4.3 to 7.8 in 1990–2019, but never reached 11 (peak 2008) [6].

[21] NACUBO Endowment Study 1990–2019, показатель «Average Annual Effective Spending Rates».

[22] NACUBO-TIAA Press Release. January 31, 2019; NACUBO-TIAA Press Release. January 30, 2020.

[23] Merker K. Six Trends in College and University Endowments. URL: https://blogs.cfainstitute.org/investor/2019/04/03/six-trends-in-college-and-university-endowments/.

[24] For 2018, the index "Assets endowments /total expenses of the Institute" is calculated as an average value for this indicator for all institution's endowments and published expenditure data (1350 private and 1343 public institutions). Compiled based on: URL: https://nces.ed.gov/ipeds/datacenter/DataFiles.aspx?goToReportId=7.

[25] Calculation "Assets endowments /total expenses of the Institute" for 20 private and public institutions with the largest endowments in the USA. Compiled based on: URL: https://nces.ed.gov/ipeds/datacenter/DataFiles.aspx? goToReportId=7.

[26] Universities offering doctoral degrees (PhD) according to the Carnegie Classification.

Table 6

Total endowment assets relative to the total expenses of educational institutions in the USA

Category / Year	1990	2015
All private non-profit research universities, including	1.5	2.2
12 universities with the largest endowments	2.9	3.6
All private non-profit research colleges, including	3	2.4
20 colleges with the largest endowments	8.2	6.8
All public research universities, including	0.2	0.6
20 universities with the largest endowments	0.7	1.3

Source: [2].

ENDOWMENTS AS INSTITUTIONAL INVESTORS

Endowments have both characteristic of traditional institutional investors and unique features [7]: long-term investment horizon; requirement to preserve the «body» endowments; no hard payables, other than expenditure rates [8]; broad diversification of assets, limited only by the fund's investment strategy, with no stringent legislative requirements on asset structure, for example, as in pension funds; the relationship between the value of endowments and the level of return and the structure of assets. At the same time, major endowments (such as Harvard, Yale, etc.) can often set new trends and patterns of investment behavior not only among endowments, but also for other institutional investors.

Investment profitability. The most profitable period for the funds was 1990–2000, followed by a period of high volatility in 2001–2010 and a return of higher returns in 2010. However, the profitability of endowments, which averaged 10–15% in 1990–2000, declined and most often did not exceed 10% (see *table. 2*), as is the case in the stock market as a whole. Generally, endowments showed lower profitability than index S&P 500; better index — in periods of strong decline in the market due to less volatility in fund portfolios (see *figure*). In 1990–2019, the volatility of the profitability of endowments was much lower than in the market — 9% versus 15%, but while the volatility of the index by 2018 had virtually remained unchanged since the 1990s, endowments grew by 1.5–2 times.[27]

There is also a positive correlation between endowments and fund profitability. For example, in 2018, for small funds (up to 100 million USD) annual returns averaged 7.6–7.7%, and for funds over 500 million USD — 8.7–9.7%.[28] This relationship (funds with assets less than 25 million USD below the fund with assets above 1 billion USD) continues for most of the period 1990–2019, except in periods of stock market decline, when small funds lost less than large funds, including higher bond ratios and low equity shares and alternative assets.[29] Larger funds, however, use more professional management and are able to influence market prices and access higher-

[27] Thus, the average volatility (standard deviation) of the rate of return over the period was in 1990–2000–4–5% for endowments (9–10% — for index), in 2001–2010–9–14.5% (for index — 15–19%), in 2011–2019–6–8% (for index — 8–11%).

[28] Average Annual One-, Three-, Five-, and Ten-Year Returns* for U.S. Higher Education Endowments and Affiliated Foundations for Periods Ending June 30, 2018. 2018 NACUBO-TIAA Endowment Study, Public NTSE Tables.

[29] For example, in 1991, 2009, 2016.

Table 7

Asset allocations for endowments in the USA, %

	1990	1995	2000	2005	2010	2015	2018	2019
Shares	50,5	57,0	62,1	58,5	46,0	49,0	52,0	50,9
Fixed-income securities	33,9	31,2	23,3	21,5	21,0	16,0	16,0	19,0
Alternative strategies	3,2	2,7	6,8	12,0	26,0	29,0	28,0	27,4
Short-term securities, money, etc.	12,3	9,2	7,8	8,0	7,0	6,0	4,0	2,6
Total, %	100	100	100	100	100	100	100	100

Source: compiled by the author based on URL: https://www.nacubo.org/Research/2020/Public-NTSE-Tables.

Table 8

Asset allocations for endowments by the size of endowment in the USA, %

Size of the fund	2008			2012			2018		
	S	F	AS	S	F	AS	S	F	AS
Over 1 billion USD	37	10	52	27	9	61	32	7	58
From 501 million to 1 billion USD	43	13	42	35	12	48	44	10	41
From 101 million to 500 million USD*	49	16	32	43	16	36	50	14	32
Less than 25 million USD	56	25	11	53	29	11	60	24	11
All funds	41	12	46	31	11	54	36	8	52

S — shares, F — fixed-income securities, AS — alternative strategies.

Source: Compiled by the author based on URL: https://www.nacubo.org/Research/2020/Public-NTSE-Tables.

* For 2018, the shares are calculated as an average of assets weighted for funds with assets ranging from 101 million USD to 250 million USD and funds with assets ranging from 251 million USD to 500 million USD.

yielding instruments through larger asset sizes [8, 9].

Composition of fund portfolios. The structure of endowments assets has changed significantly in almost 30 years (*table. 7*):

- the share of market securities (equities and bonds) fell from 84 to 70%, mainly due to a twofold decline in the share of bonds. Shares are characteristic cyclical dynamics — in 1990–2000 their share increased (maximum value in 1999–64%), in 2001–2010 — reduced to minimum values (46%), and from 2011 — again growth and return to the level of the early 1990s. The share of foreign equities also increased significantly — from 5 to 44% of total equities in the asset structure of the funds[30];
- the declining share of market securities was offset by an increase in the share of alternative assets[31] from 3 to 27%,[32] which

[30] By data NACUBO Endowment Study 1990–2019. URL: https://www.nacubo.org/Research/2020/Public-NTSE-Tables.

[31] Alternative strategies are direct investment [funded buy-out (LBO), mezzanine funds, etc.], market alternative assets (hedge funds, absolute yield strategies, etc.), venture capital, direct investment in real estate private equity, non-university, energy and natural resources, commodity derivatives and managed futures accounts or funds (managed futures), bad debts, etc. Source: NTSE Fiscal Year 2018 Asset Allocations for U.S. Higher Education Endowments and Affiliated Foundations. NACUBO Endowment Study 2018.

[32] Dimmock S.G., Wang N., Yang J. The Endowment Model and Modern Portfolio Theory. NBER. April 2018.

grew almost continuously from 1990 to 2012 [7],[33] but has remained at 28–29% since 2013, with a slight decrease in 2019;

• Share of cash and treasury securities decreased 3–4 times to 2.6–4% in 2018–2019.

The asset endowments structure also shows a clear relationship to the value of the fund, which continues throughout the period 1990–2019. The larger the fund's assets, the higher the fund's "appetite" for risk and higher its exposure to riskier assets (*table 8*), and above level of diversification of assets:

• large funds have higher shares of alternative strategies and lower shares of equities and bonds [7]. For example, in 2018, the share of alternative strategies falls from 58% to 11%, and the share of shares increases from 32% to 60% depending on the size of the fund (from large to small)[34] (*table 8*). Since 2012, there has been a gradual decline in the share of alternative strategies in all but small fund categories;

• large funds (over 1 billion USD) have a higher share of foreign equity in assets than small funds (in 2018–60% against 25%, in 2008–53% against 20%[35]);

• small funds (up to 25 million USD) maximize a share of market-based alternative strategies by investing in alternative assets (55% of all alternative assets in 2018, 33% — for large funds), and large funds diversify (direct investment and venture capital account for 19 and 14% of alternative assets, small funds account for 9 and 9% of assets).[36]

In 2018, endowments were among the first institutional investors to invest in cryptocurrency,[37] — about 140 funds (88% from the US, the rest from the UK and Canada), with 54% of the funds directly investing in crypto assets and 46% — through investment funds [10].[38]

The increasing diversification of endowments assets, including the share of alternative assets, has led to a concomitant increase in fund management costs, especially for large endowments. In 1990–2010 the average level of asset management expenditure[39] was 0.56–0.66%. In 2016, asset management costs ranged from 0.38% (for small funds) to 0.8% (for major funds), total costs (including fund administration) to 1%, but can reach 1.75% with additional management fees [11].

Organizational structure of fund management. During the period 1990–2019, the level of professionalism in the management of endowments' assets increased significantly,[40] especially in large funds:

• fund investment committees have become more important and membership has increased; an active investment committee, usually composed of professional managers, is in place (the larger the fund's assets, the larger the number of members[41]) and university graduates, opening more investment opportunities for foundations [4];

[33] This management model (with a high proportion of alternative assets) was applied in the mid-1980s to manage the endowments of Yale University and reproduced afterwards not only endowments, but also other institutional investors. After the 2008 crisis, Yale University, which lost 27% of its asset value, revised its investment strategy.

[34] In 1990, for funds of 400 million USD or less, the share of alternative assets was 20%, for funds of up to 25 million USD — only 5%.

[35] By data NACUBO Endowment Study 2018, 2008.

[36] By data NACUBO Endowment Study 2018.

[37] These include Harvard, Yale, Michigan, Stanford and others. Huillet M. 94% of Surveyed Endowment Funds are Allocating to Crypto Investments: Study. Cointelegrath. April 15, 2019. URL: https://cointelegraph.com/news/94-of-surveyed-endowment-funds-are-allocating-to-crypto-investments-study.

[38] Of the 150 endowments that took part in the survey.

[39] Management fees and custody costs.

[40] The quality of the management board and the investment committee is inextricably linked to the financial results of fund management. Merker K. Six Trends in College and University Endowments. URL: https://blogs.cfainstitute.org/investor/2019/04/03/six-trends-in-college-and-university-endowments/.

[41] In 2011, for example, as a member of the Investment Committee of Funds with assets in excess of 1 billion USD there were about 8 professional managers, and only 2.4 professionals in funds with assets of up to 25 million USD. Source: NACUBO Endowment Study 2011. P. 55.

• the practice of hiring full-time professionals to manage assets, mainly in large funds — full-time investment manager, portfolio manager, analyst. In 2008–2011, the average share of funds with a full-time investment manager increased from 14 to 20%, with funds with assets in excess of 500 million USD, such a staff member was in 60–80% of funds, and in funds with assets ranging from 100 million to 500 million USD in 17% of funds, in funds with assets up to 25 million USD only 1% of funds. In 2011, the portfolio manager and analyst were in 11% and 19% of all funds respectively (but in 48% and 66% of the funds — the "billionaires")[42];

- outsourcing of investment functions is becoming increasingly common (with the larger the fund, the lower the share of outsourcing tends to be) [12]), i.e. the share of assets under the internal management of the funds gradually decreased, and the participation of additional investment advisers increased.[43]

The decline in the rates of return of funds while maintaining the level of payments, increased competition in the USA education market, tightened regulation of endowments led to a trend of optimization of the process and management structure endowments in large funds, including the reduction in the number of fund staff, which can gradually be replicated in smaller endowments [13].

Application of ESG criteria (environmental, social and corporate governance criteria). University endowments were among the first institutional investors applying responsible investment. Thus, in the NACUBO reports already in 2000, about 40% of foundations declared the use of socially responsible investment criteria for endowments, of which at the direction of donors to the fund.[44] Since 2012, massive student campaigns against university investment in fossil fuels and in favour of climate-friendly investment policies have led to a reduction or abandonment of certain investment positions in some endowments[45] [14]. But, as with the responsible investment market in general, there has been a shift from negative screening strategies (not investing in certain areas) to the active use of ESG criteria in the investment process.

В 2016–2017 соответственно 17 и 16% образовательных учреждений использовали критерии ESG при инвестировании активов endowments [15], assets, with educational institutions having 317 billion USD (8% increase compared to 2016) i.e. approximately 50% of assets of all endowments [14]. The degree of use of ESG among educational institutions is uneven from year to year, but the amount of assets invested according to these criteria remains high due to the participation of the largest endowments. However, it can be expected that ESG assets will grow as a practice that positively influences investment performance as an important element of investment management, as well as the involvement of small endowments[46] [14].

REGULATION OF ENDOWMENTS ACTIVITIES

One of the most pressing issues to regulate endowments in the USA — is the introduction of the endowments tax as part of the major

[42] NACUBO Endowment Study 2008, NACUBO Endowment Study 2011.

[43] In 2002, an average of 75% of endowments used such consultants for investment, in 2011–81%, with funds with assets ranging from 500 million USD to 1 billion USD the most frequent external consultants (94% of funds have complex portfolios, but not a large staff of funds) and the least frequent are funds with assets up to 25 million USD (59% of funds) and funds with assets above 1 billion USD (69% of funds) Source: NACUBO Endowment Study 2008, NACUBO Endowment Study 2011.

[44] NACUBO Endowment Study 2000. P. 4.

[45] Ross A. University Endowment Funds Face Increasing Pressure to the More Sustainable. Financial Times. May, 2018.

[46] See ibid.

changes in the USA tax laws in 2017.[47] The purpose of the tax is to limit the growth of funds and to increase access to education for students, while making higher education more expensive (it's estimated that the higher the endowment assets per student, the lower the percentage of students from low-income families) [16]. On the one hand, the new tax reduces the income of large endowments, and therefore the payments to finance university programs,[48] and reduce the attractiveness of donations to donors.[49] On the other hand, the tax is seen by its proponents as a way of depriving the largest endowments of their advantage (in attracting students) in the absence of taxation of investment income that is not comparable to that of small funds. Given that annual investment returns of endowments tend to exceed spending rates (see above), the largest funds retain a portion of the income for additional distribution, including to support students from low-income families. In addition, experts estimate that a reduction in corporate income tax would boost the value of most endowments' equity and alternative strategies assets and offset tax losses.[50]

KEY TRENDS AND FORECAST TO 2030 FOR THE U.S. MARKET

In 30 years, the development of the endowments market in the United States has been accompanied by the following trends:

- strong market growth (the total assets of the funds have increased tenfold, the number has only doubled, and the coverage of higher education endowments has increased by only 10% to 70% of institutes); the industry's assets doubled every 5 years from 1990 to 2000, and only 15 years later;
- shift from a model of multiple medium, small and small funds balancing large funds to a model of dominance by large funds concentrating on fixed assets;
- increase in the level of "maturity" of the market, which with the cessation of the numerical growth of endowments became evident through the trend of consolidation of funds and the predominance of larger endowments (reducing the share of small funds with assets to 25 million USD and expanding the "layer" of funds with assets over 100 million USD);
- uneven market growth — faster growth, greater concentration of assets in the largest billionaire funds, which account for 78% of total market assets, with a 13% share in numbers (in 1990–38% of assets, 3% by number);
- the predominance of endowments of private educational institutions — they are larger on average, they are larger and more important for private institutions (especially private colleges), but the number, assets and importance of endowments for public institutions is growing gradually, and the gap between private and public funds is narrowing;
- reduction in the average rate of endowment spending (from 5.5 to 4.4%) in the context of a decline in the overall level of income; funds are important sources of funding for educational institutions: the larger the fund, the higher the payout from it, the greater the importance of endowments for the institute (payouts range from 5% of the institution's budget for funds with assets to 25 million USD up to 15% of the budget for funds with assets in excess of 500 million USD);
- returns on endowments are generally lower than in the general market, but also lower volatility; in the long term 1990–2019 — trend

[47] A tax of 1.4% on investment income endowments for private colleges and universities with at least 500 students and the index «Endowments assets per one full-time student» is at least 500,000 USD, some 35 existing institutions will be affected. This tax was introduced as part of The Tax Cuts and Jobs Act of 2017, which also reduced individual and corporate tax rates, including corporate income tax to 21%.

[48] The Council for Advancement and Support of Education. URL: https://www.case.org/resources/endowments.

[49] This includes doubling the amount of the standard tax deduction, where charitable donations do not reduce the amount of taxable income [this can only be done using a detailed (itemized) deduction].

[50] Brown A. The GOP Tax Bill Will Benefit Colleges — Even Those With Endowments It Now Taxes. Forbes. 3 April, 2018.

of a gradual decline in asset yields (from double digits above 10–15% to single digits — below 10%) with almost double volatility;

- large funds gain — the higher the size of the assets of the funds, the higher the average rate of return (funds with assets above 1 billion USD have returns above those of funds with assets below 25 million USD by several percentage points);
- endowments are characterized by a focus on maximizing income in the context of declining market profitability — declining share of market securities (bond share declines twofold, equities cyclical) replacing them with more risky alternative assets (their share increased from 3 to 27% in fund portfolios);
- investment strategy dependent on fund size — the larger the fund, the higher the appetite for risk, the higher the share of riskier instruments increases and the lower the share is more conservative; large funds are the most "professional" investors among endowments, maximizing a share of more profitable and risky assets compared to small funds (share of alternative strategies — 58% against 11%, foreign shares — 60% against 25%) reducing shares (32% in the largest as opposed to 60% in small funds) and bonds;
- in the context of the rapid growth of assets and the increasing complexity of the investment behaviour of the funds, there are reciprocal trends — the increase in the cost of managing the funds, especially in large endowments; increased professionalism in managing the assets of the funds; initiation of inevitable processes of organizational optimization in the largest funds in the context of declining returns and growth of the staff of the funds; extension of the use of ESG in the management of endowments assets (in 2016, 50% of the assets of the funds were managed according to such criteria);
- the emergence of regulatory mechanisms (tax on investment income of a number of funds) to level the playing field between the largest and other endowments.

CONCLUSION

By 2030 can be expected:

- slower growth in the number of new endowments in education and slower growth in the assets of existing funds with some saturation of the market; continuing the consolidation of funds, moving them from smaller categories to larger ones, including from private commercial educational institutions.[51] A possible doubling of the market is more likely on the horizon of 15–20 years, with expected shortfalls in income and assets in times of global financial crises;
- increasing in the number and assets of State educational establishments in the context of their growing role in the market of higher education and the reduction of State funding;
- increasing the importance of funds for educational institutions (including in relation to the size of their annual budgets) in the context of increasing competition and decreasing State funding, and also as the assets accumulate endowments; against this background a gradual increase in the rate of expenditure from endowments — funds is possible;
- the volatility of the funds' returns remains fairly high, including due to the availability of a large share of alternative assets and the increase in the share of new financial instruments;
- continuing the process of optimizing the organizational structure and the administrative and management costs of the funds in the context of declining returns, increasing competition in the education market (both for students and donors) a decrease in State funding of educational institutions;
- increasing regulatory burden on endowments — funds as their importance as institutional investors grows.

[51] The growth of private commercial institutions, which lasted until 2013, could delay some of the potential endowments donations.

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