

HELENA



Higher Education Global
Efficiency Analysis

Do financial resources hinder or support efficiency in HE in the long run?

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Agenda

- 1. Introduction**
- 2. Selected Data**
- 3. DEA Results**
- 4. Critical View**
- 5. Conclusion and Further Research**

1. Introduction (I)

- In general it seems the top universities have the most financial resources!

Ranking	University	Total Revenue
1	California Institute of Technology United States	1.589.506.052 €
2	Harvard University United States	2.822.319.670 €
3	Stanford University United States	4.382.488.600 €
4	University of Oxford United Kingdom	1.067.839.520 €
5	Princeton University United States	939.029.242 €
6	University of Cambridge United Kingdom	919.881.738 €
7	Massachusetts Institute of Technology United States	2.054.973.260 €
8	Imperial College London United Kingdom	817.717.040 €
9	University of Chicago United States	2.283.307.191 €
10	University of California Berkeley United States	1.567.252.932 €

Source: THE World University Rankings 2011-2012, Financial Reports FY 2011
www.helena.wiwi.uni-due.de

1. Introduction (II)

- Compare the top 10 of THE Ranking 2011-2012 with the last 9 Universities from the US (Ranking 351-400).
- Ranking is the same for all of them, there are just in an alphabetical order.

Ranking	University	Total Revenue
351-400	Auburn University	429.305.984 €
351-400	Clemson University	536.222.060 €
351-400	Georgia State University	249.311.533 €
351-400	University of Idaho	155.716.277 €
351-400	Kansas State University	372.200.061 €
351-400	Michigan Technological University	110.175.536 €
351-400	New Jersey Institute of Technology	189.903.855 €
351-400	Old Dominion University	157.492.895 €
351-400	University of Wyoming	343.964.840 €

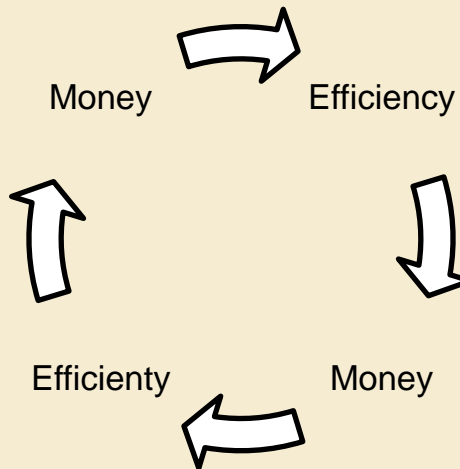
Source: THE World University Rankings 2011-2012, Financial Reports FY 2011

1. Introduction (III)

Why do top universities have more money than others?

- Are they getting a lot of external funding, because they appear to be (or are) successful and efficient?
- Are they more likely to be successful and efficient, because they have so much money at their disposal?

If it's true than we have **“an endless and unrealistic cycle of money generating process”**.



2. Selected Data (I)

- The aim is to compare various universities that are “similar” and “comparable”.
- Step 1: Only universities with **AACSB Accreditation** where considered in this research.
 - AACSB (Association to Advance Collegiate Schools of Business) is a standard that ensures a certain quality in higher education.
 - Reviews every 5 years ensure steadiness.
- Step 2: Not only teaching is important in HE, but also research activities. So universities are checked if they are in the **ARWU Ranking**.

2. Selected Data (II)

- How are universities selected?

AACSB	ARWU	DATA	INFO	SELECTED
✓	✓	✗		✗
✓	✓	✓	< 6 FY	✗
✓	✓	✓	6 FY	✓
✓	✗	✓	6 FY	✓

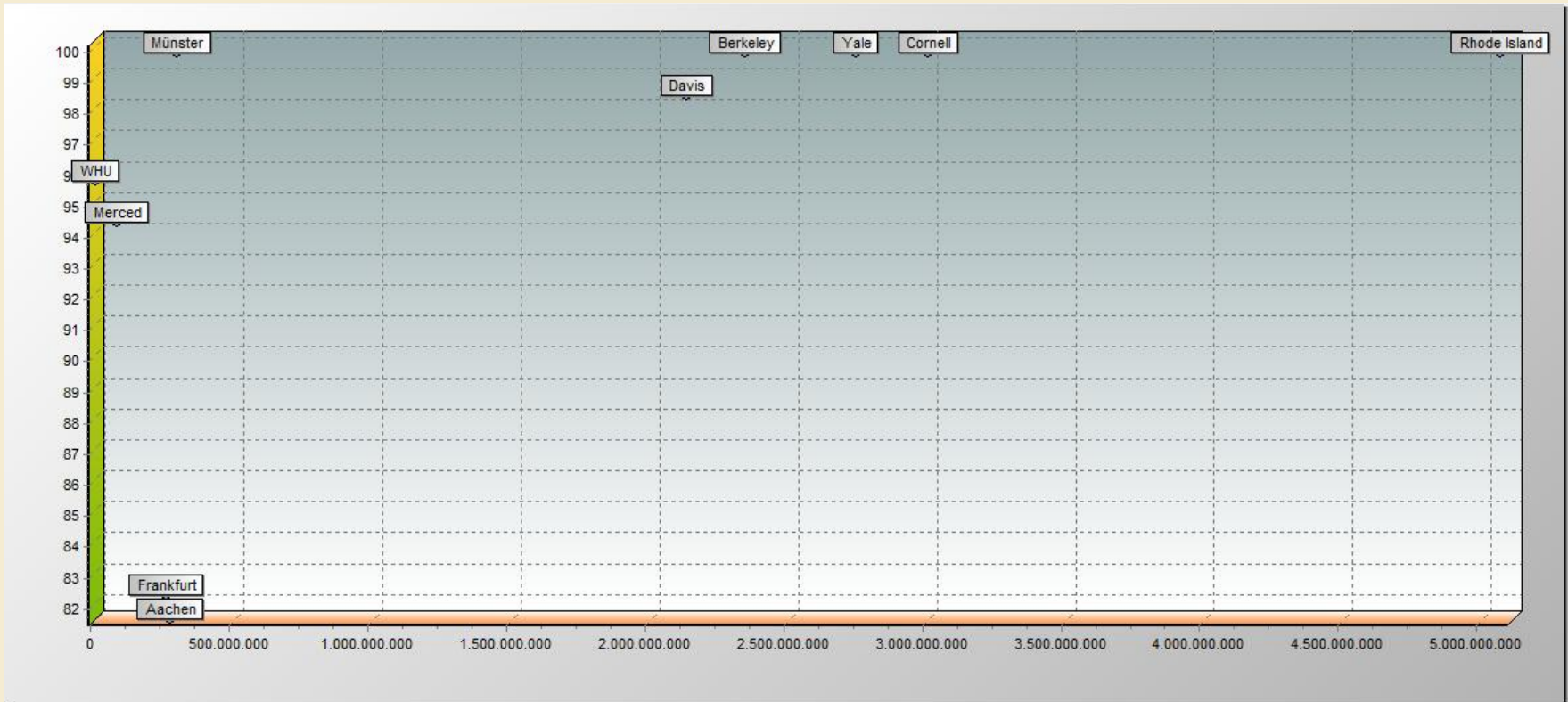
- WHU-Otto Beisheim School of Management (DE) and Merced University (US)
- Total of 10 universities are selected. (4 from Germany, 6 from the United States)

3. DEA Results (I)

- Results are divided in 3 sections:
 - Section 1: **Horizontal View**
 - every single year for all 10 universities
 - 6 charts with 10 units
 - Section 2: **Vertical View**
 - single university separately for 6 years
 - 10 charts with 6 units
 - Section 3: **Matrix View**
 - all 10 universities for all 6 years
 - 1 chart with 60 units

3. DEA Results (II)

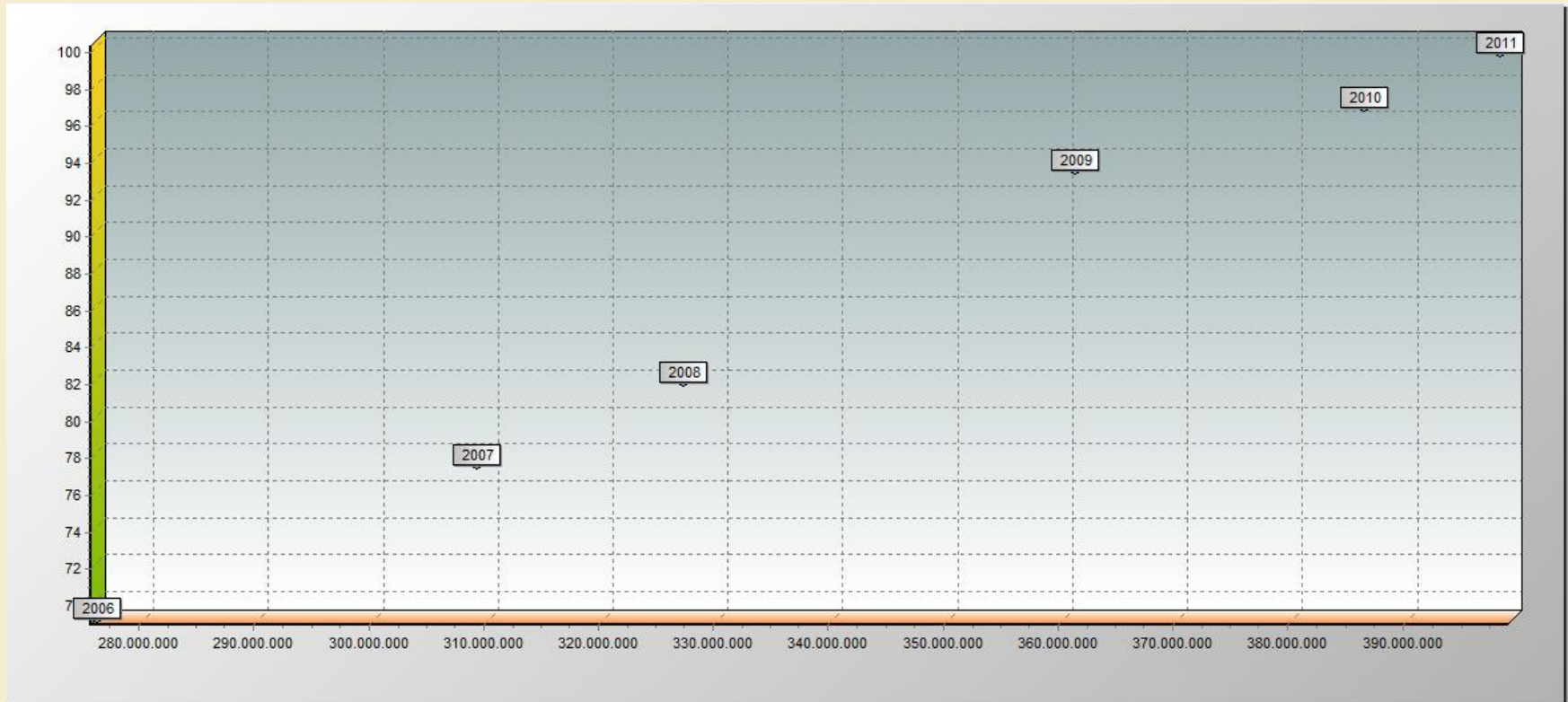
Section 1: Horizontal View



- Figure above is for the FY 2007 (exemplary).
- In 2006 every university is efficient, because the definition of input and output.

3. DEA Results (III)

Section 2: Vertical View



- Figure above is for the University of Münster (exemplary).
- With every year, nearly every university gets more efficient.

4. Critical View (I)

- Budget vs. Total Expenses:
 - There are differences in accounting standards between different countries.
 - Budget = Total Expenses w/o Medical Income
- Budget had to be converted into Euros. (Average conversion rates for every year were used).
- Inflation was not considered in this research.

4. Critical View (II)

- The AACSB Accreditation is mainly for business schools, so it isn't a good measure for comparability.
- Due to the definition of input and output the universities get more efficient every year.
 - Budget Input is always the budget from the FY 2006.
 - With increasing budget in the following years, universities in this research get „easily“ more efficient.

Research Results

1. 2011 is the most efficient year for every single university.
2. There can be a trend observed: With every following year the universities get more efficient than the previous year.
3. However there are no major shifts of positions of universities related to each other. The positions taken in 2007 are nearly the same for the whole time.

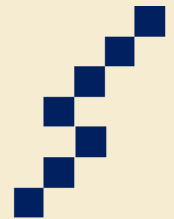
5. Further Research

- In future researches it should be more data included:
 - more universities
 - different countries
 - longer time periods
 - other parameters such as publications or PhDs
- It has to be found a better way to show the relation between budget input and output. (multi-stage and multi-periodic DEA Analysis)

**Thank you for your
patience and interest.**



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