

Year Nine as a DG Center of Excellence

CREATES' started its activities as a DG Center of Excellence in April 2007, initially for a 5-year period. Following a peer-reviewed mid-term evaluation during 2011 the Danish National Research Foundation decided to fund CREATES for additionally 5 years for the period April 2012-March 2017. At the end of the reporting year, CREATES is thus entering its final full year as a DG funded center of excellence. Almost synchronously with the beginning of the new granting period CREATES and its host institution, Department of Economics and Business Economics, moved to a new location at the Aarhus University campus Fuglesangs Allé which is the location of the former Aarhus School of Business. Despite the physical distance to the main campus, the new location provides an excellent physical frame for the daily activities. The facilities are optimal and the move has made it possible to gather CREATES people better and to establish a research environment to the benefit of everybody. Although CREATES has peaked in terms of the number of both junior and senior researchers at the center, recent attraction of new funding opportunities gives good prospects for the continuation of research activities and the forthcoming embedment of the center within the host department.

Research Output

At CREATES we are very pleased with the progress of the center and the research results that have been achieved so far. Today, CREATES is one of the world's leading research centers in econometrics and according to international rankings such as RePEc, the center is placed amongst the leading institutions worldwide within the fields of econometrics and time series econometrics. CREATES is doing well along all the parameters that are considered essential for a world leading research center. This includes the training of PhD candidates, the organization of high quality seminars, workshops, and conferences, and a regular flow of distinguished visiting researchers. Most importantly, the research output at CREATES is flourishing. In 2015 almost 90 papers were published in peer reviewed journals and books and more than 50% of journal articles appeared in absolute top econometrics and finance journals including *Econometrica* (3), *Journal of Econometrics* (10), *Econometric Theory* (4), *Journal of Financial Economics* (4), *Journal of Applied Econometrics* (2), and *Journal of Business and Economic Statistics* (3). More than 80 papers are presently forthcoming publications in peer reviewed journals and books. 61 working papers were published in the CREATES Research Paper series during 2015 and the majority of these are currently under review at journals.

Research Fields

The research conducted at CREATES covers a broad range of sub-fields. One of the most active research areas is within the econometric analysis of high-frequency time series data, especially volatility modelling of financial data. The activity and research production is impressive and CREATES can document one of the strongest research groups worldwide in this field. Building on these competencies the area is expanding with focus on the stochastic and econometric modelling of commodity markets including energy markets. This area is one of the focus areas which is considered "high-risk" in the CREATES research plan and includes interdisciplinary research collaboration both within Aarhus University and with international research partners. The research in this area will grow in the coming years entered by recent international recruitments. Furthermore, CREATES has attracted further funding to strengthen this research field.

Other focused research fields at CREATES include theoretical time series econometrics: the analysis of non-stationary time series, long memory models, and non-linear time series modelling. Also the fields of empirical finance, asset pricing, and housing market

modelling have a very dominant priority in CREATES' research plan. A large group of researchers is attached to this field.

One particular field to emphasize here concerns the construction of statistical algorithms for econometric analysis of high-dimensional data sets. In economics and finance as well as in other research fields, the access to databases of large dimensions is becoming an increasing challenge for data analysis. In the future, CREATES will become a visible research player within the expanding field of "Big Data Analytics", especially for high-dimensional data relevant for the social sciences.

A new field on the research agenda is concerned with the analysis of climate data by use of econometrics tools. Traditionally, statistical methods have played a relatively minor role in climate research and it seems natural to combine econometric time series methods in the empirical analysis of structural climate models. A recent grant from the AU-Ideas initiative is supporting this research in the start-up phase. Promising results and research collaborations have been achieved so far and plans for future activities and projects are currently being shaped.

Seminars and Conferences

CREATES has very active seminar series and regularly organizes international symposia, conferences, and workshops. During 2015 almost 50 regular lunch and invited seminar presentations were given. In addition, CREATES organized and participated in organizing four international conferences and workshops. One of the major events, not only during 2015, but also during the lifetime of CREATES, took place 23-26 June 2015 where the center hosted the 8th Annual SoFiE Conference. CREATES is an institutional member of the Society for Financial Econometrics, SoFiE, and the annual conference takes turns across the Asian, European, and North American continents. In 2016, the 9th Annual SoFiE Conference takes place in Hong Kong.

CREATES continued its Distinguished Speaker Lectures with a lecture by Professor Russell Davidson from McGill University and Professor James Hamilton, University of California at San Diego. The lectures are video recorded and are made available through CREATES' podcast archive at www.creates.au.dk.

Domestic and international researchers contributed with a series of specialized PhD courses covering a range of fields in time series and financial econometrics.

About CREATES

Center for Research in Econometric Analysis of Time Series, CREATES (DNR78), is a research unit at Aarhus University, hosted by the Department of Economics and Business, BSS. Research is conducted within the general fields of time series and financial econometrics. The center is funded as a Center of Excellence by the Danish National Research Foundation via a DKK 80.2m (Euro 10.7m) grant on top of the funding from the host institution. To date CREATES has attracted additionally DKK 57m to support center activities from other external sources. The funding period covers a 10-year period 2007-2017. CREATES' core group of members are affiliated with Aarhus University. A number of international research fellows (many of Danish origin), are associated with CREATES. The research at CREATES is characterized by interdisciplinary collaboration amongst economists, econometricians, and mathematical statisticians