

Demand management

December 2016

This analysis summarises what we know about the general effects of ESRC's demand management policy since its introduction in 2011.

We are sharing it externally to invite comment, discussion and further analysis. Our aim is to use its conclusions to help us to work effectively with research organisations (ROs) on future demand management policy and research strategy.

Key findings	2
Patterns of demand	3
Has demand management worked?	5
Future demand	8
Conclusions.....	12

If you have any questions or comments about this analysis please contact the head of ESRC's Insights team, Alex Hulkes (email alex.hulkes@esrc.ac.uk or telephone 01793 413039).

Key findings

ESRC's demand management policy reduced total application volumes and increased the proportion of higher-quality proposals received following its introduction.

The situation has deteriorated noticeably in the last two years. The initial reductions in grant volume have reversed and the proportion of submissions identified as being of lower-quality has also increased.

This recent increase in demand is felt across all schemes. The majority of demand relates to targeted activities, with only a quarter of applications being submitted to responsive mode.

There is no obvious main force driving the recent increase in demand and it seems that all disciplines contribute to it to roughly the same extent. We appear to be in a new demand environment, one in which our current policy is less effective than we would like.

Patterns of demand

We first introduced a demand management policy in Financial Year 2011/12. Its effects were immediate and obvious (Figure 1), as is the fact that those effects have not persisted to any meaningful degree:

Following early reductions, overall demand has increased recently, though the proportion of demand felt through responsive mode remains stable

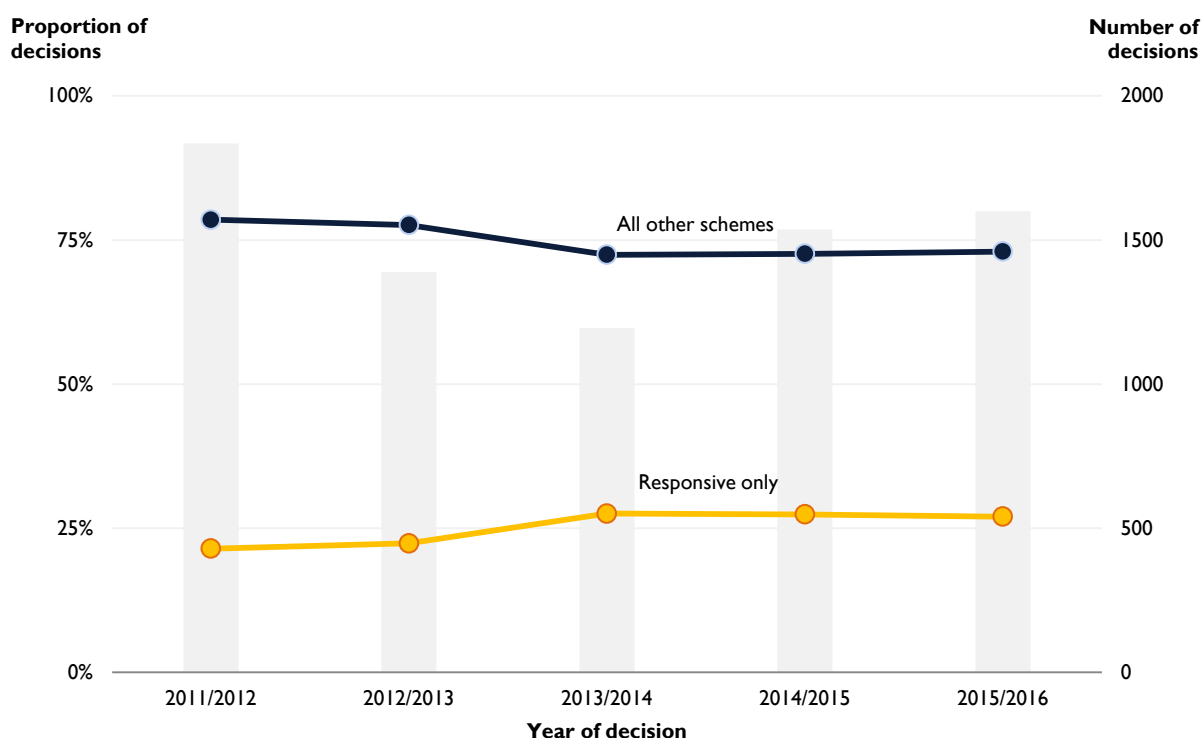


Figure 1: total demand (columns, as measured by the number of decision made) and the proportion of demand going through responsive mode (lines) from 2011/2012 to 2015/2016. Responsive mode is defined as grants submitted to the 'Research Grants (open call)' only, as a guide.

There was a significant decline in the total number of grants received in the two years following the policy's introduction. Demand (in terms of the number of grants on which a decision is made) in the most recent financial year is only just below its 2011/2012 peak.

Growth in demand is felt across ESRC's activities. In general around 25 per cent of proposals are directed towards responsive mode, and this figure has changed little since 2011. The recent increase in demand cannot be traced back to a single funding route.

Figure 2 shows the proportions of overall demand deriving from each recorded primary ESRC discipline in the last four financial years.

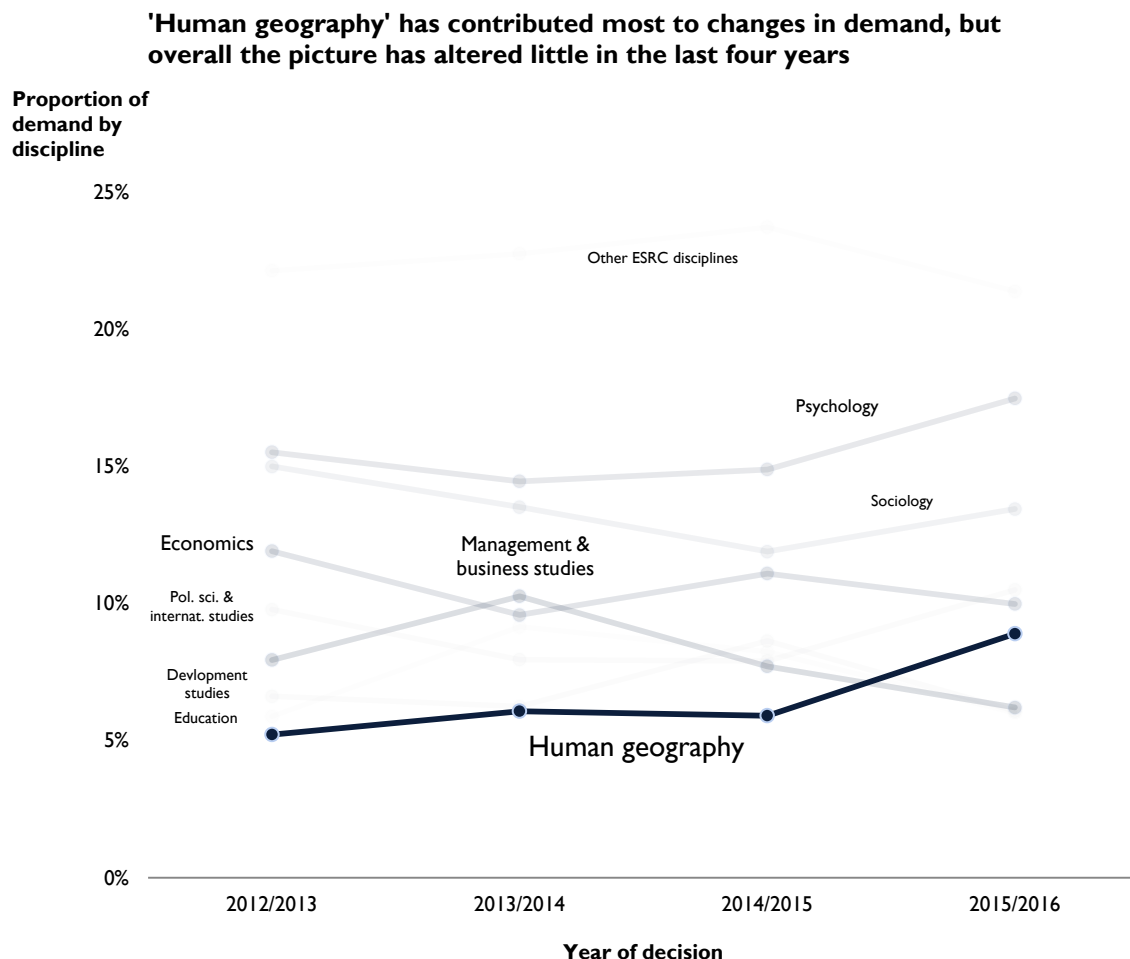


Figure 2: proportions of demand by discipline in financial years 2012/2013 to 2015/2016. Lines are shaded to indicate the degree to which they contributed to the variability in demand between the start and end of the period. Label sizes are scaled similarly. The 'Other ESRC disciplines' category is the total for the remaining 10 smallest disciplines by volume of decisions. Discipline data are provided by applicants.

While there is some variability year-on-year, in general the proportion of demand arising from disciplines is reasonably stable on these timescales. The potential exception is 'Human geography'. There has been some increase in decision volume for this discipline since 2011/2012, though starting from a low initial proportion.

Overall it seems reasonable to conclude that no single discipline has been a dominant cause of increased demand.

Has demand management worked?

As well as decreasing overall demand, an effective demand management process will preferentially discourage the submission of weaker proposals, leaving only the stronger candidate ideas to be submitted for (expensive and time-consuming) peer review. If a demand management policy works, the overall probability that a ‘research concept’ results in a grant application should reduce, but more so for poorer ideas.

By combining data on proposal ratings as assigned by panels with reasonable assumptions¹ about the probability that a research concept ultimately results in the submission of a proposal to ESRC we can see whether this has happened (Figure 3).

The probability of a fundable idea turning into a proposal increased following the introduction of demand management, while unfundable ideas were less likely to be submitted

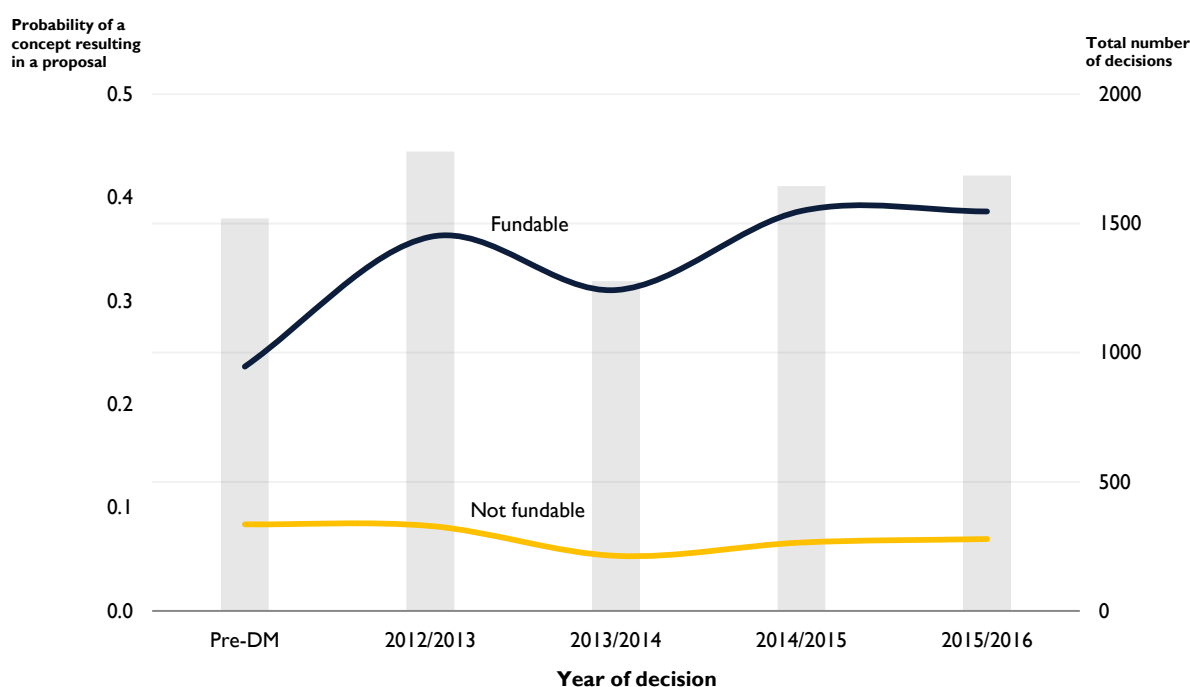


Figure 3: estimated probabilities of research concepts being submitted as grant proposals. The counts are numbers of decisions relating to proposals submitted before or after demand management was introduced. Some 2012/2013 decisions may relate to proposals submitted before the policy was introduced.

¹ These being that of all concepts arising in a year no more than 20 per cent, and probably less than 10 per cent, will turn into ESRC proposals and that around 10 per cent of ideas are objectively good ideas. While the exact estimates can be debated and the probabilities given are only ballpark figures, the relative trend is quite insensitive to assumptions.

As hoped for, the overall probability of a proposal being submitted reduced following the introduction of demand management. And, as also hoped for, this reduction was more marked for proposals judged unfundable² than for fundable³ proposals.

While the demand management policy is ESRC's, the task of identifying poor-quality proposals falls to ROs. And in the early years of demand management ROs were successful in doing this. The probability of a poor-quality research concept being turned into a poor-quality proposal just about halved in the first two years, and is now very low.

At the same time, the probability that a fundable research concept would result in a request for funding from ESRC increased. To start with, this increase in demand was manageable as it was initially offset by the decrease in the number of lower quality proposals. But in recent years lower quality proposals have become more common, while the volume of fundable proposals has remained the same.

The net effect is the observed increase in demand since mid-2014. While there is evidence that ESRC's demand management approach can control application volumes, there are also clear indications that its effects have worn off.

Proposal quality also matters, and one way of understanding how quality may have changed as a result of demand management is to look for changes in the odds of a proposal being rated as fundable.

The odds of a binary event happening are:

$$\frac{\textit{probability of the event happening}}{(1 - \textit{probability of the event happening})}$$

Odds ratios for each demand management period, relating the quality of pre-demand management proposals to those received after the policy's introduction, are shown in Figure 4. Odds ratios of greater than 1 indicate an increased chance of a proposal being rated as fundable at a panel.

² This is proposals rated as 'unfundable' by panels, rejected before panel based on reviewers' comments or otherwise rejected early in the assessment process.

³ This is the combined total of funded proposals and those not funded but considered to be worthy of funding. In the last five years ESRC has funded 50 per cent of all fundable proposals received.

The odds of a proposal being judged fundable by a panel increased after demand management was introduced

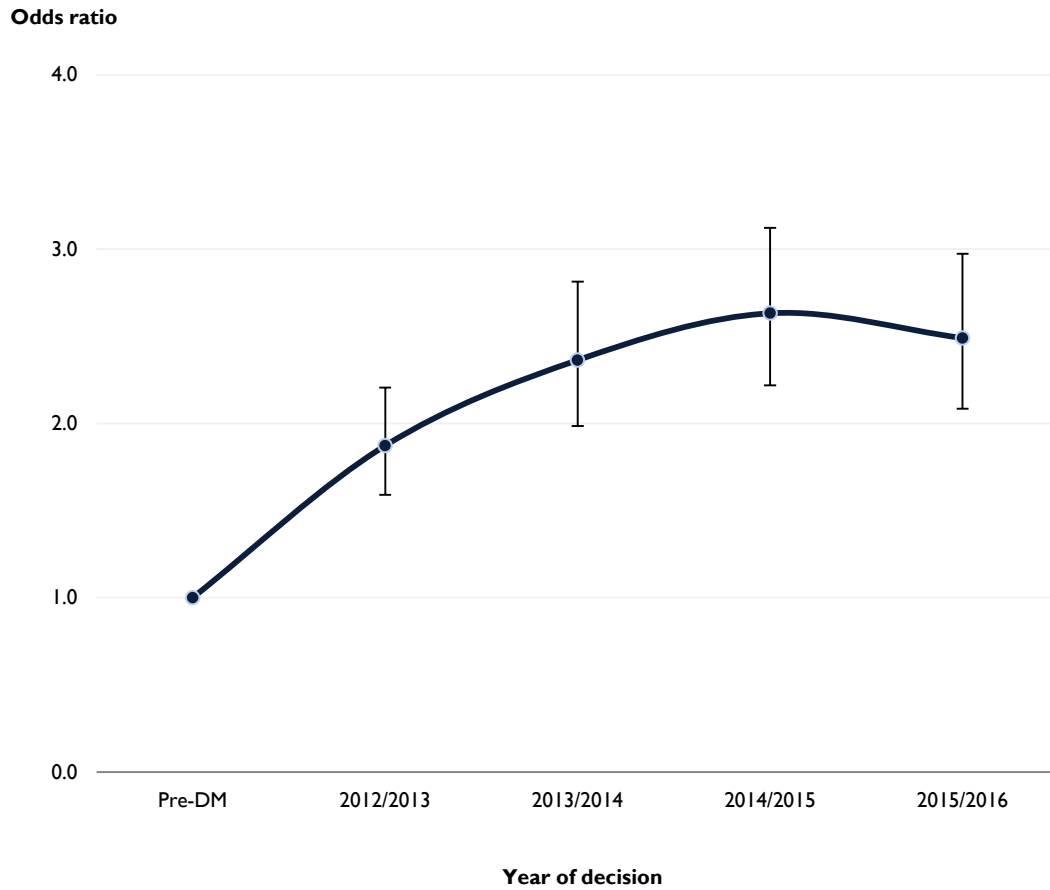


Figure 4: odds ratios of fundable vs. unfundable outcomes for decisions made in the last four financial years, relative to pre-demand management levels. Error bars are approximate 95 per cent confidence intervals.

The odds of a proposal being highly-rated have increased significantly since the introduction of demand management. While there may have been a dip recently, it is too early to say conclusively whether this trend has reversed.

Future demand

Total demand is a function of the number and size of requests for funding. Both factors need to be considered when thinking about demand and how it might be understood and managed. We know that median grant sizes have increased over the last five years (Figure 5):

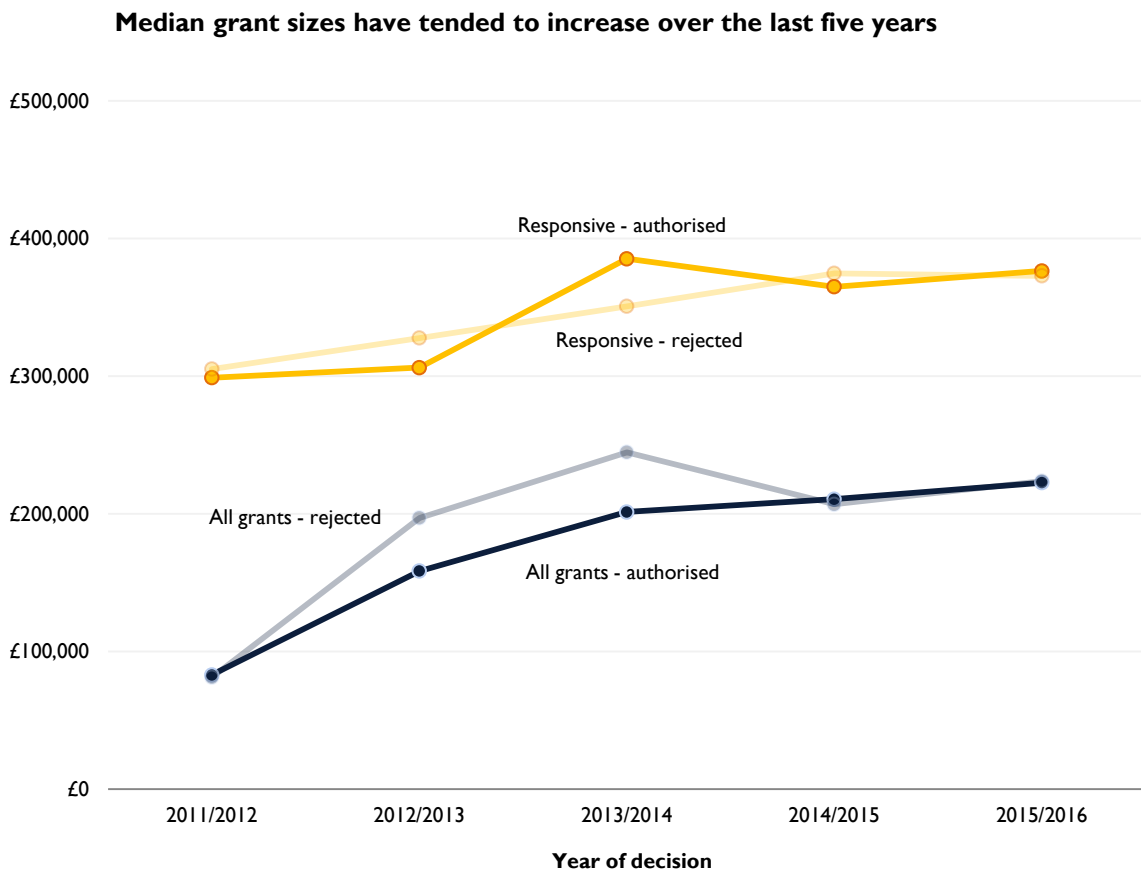


Figure 5: median grant size changes over the period 2011/2012 to 2015/2016. Scheme limits for responsive grants changed in July 2015, and are now £350,000 to £1 million.

Increases in grant sizes (Figure 5) and application volumes (Figure 1) combine to reduce success rates. The overall pattern of change in the last five years is shown in Figure 6.

ESRC may have moved into a new environment of larger grant requests, increased proposal volume and lower success rates

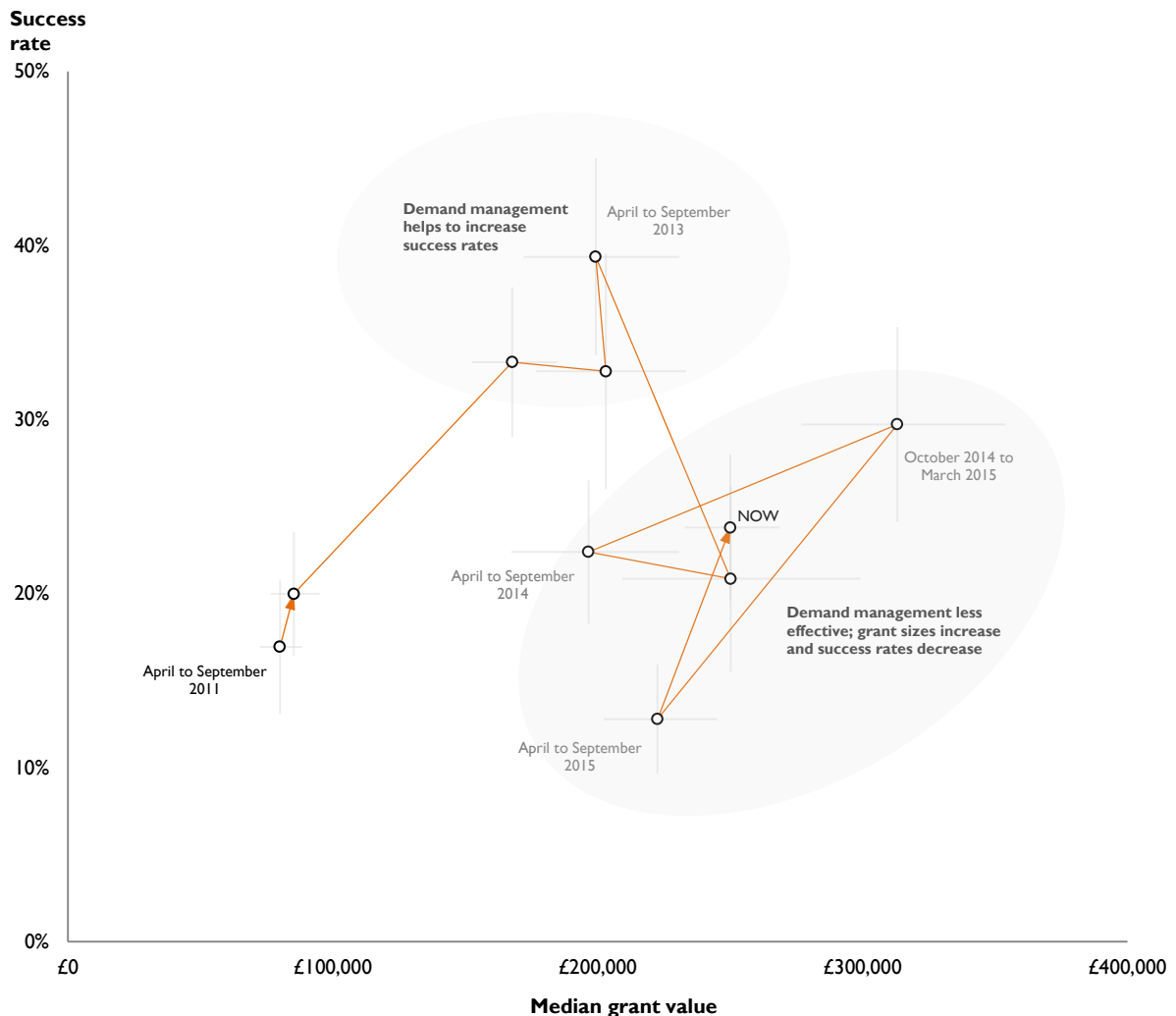


Figure 6: changes in median grant sizes (x-axis) and success rates (y-axis) for decisions taken in six-month periods since April 2011. Error bars are used to give an impression of the degree of variability that might be associated with each point.

ESRC is probably in a new funding environment, in which the money available can no longer keep pace with demand for it. It seems unlikely that we will spontaneously revert to an earlier state.

Growth in median grant size is clearly a trend. But are increases in application volume mere hiccups or are they signs of a permanent change in the efficacy of the demand management policy? Overall, what is the future direction of travel? Unfortunately, the information we have is suggestive rather than conclusive.

The drivers of demand are complicated and it is not clear that it makes sense to try to predict broader trends in application volumes. As Figure 1 shows, about three quarters of demand comes in response to targeted funding opportunities. The greatest part of any prediction relating to volume of proposals will be in effect a prediction of ESRC choices.

That said, demand for responsive-type funding, where the opportunity is very open and (in general) consistent may be an indicator of demand in the round. The monthly volume of responsive mode applications since April 2012 is shown in Figure 7.

Demand through responsive mode increased steadily until mid 2015 and has now stabilised at a new, higher, level

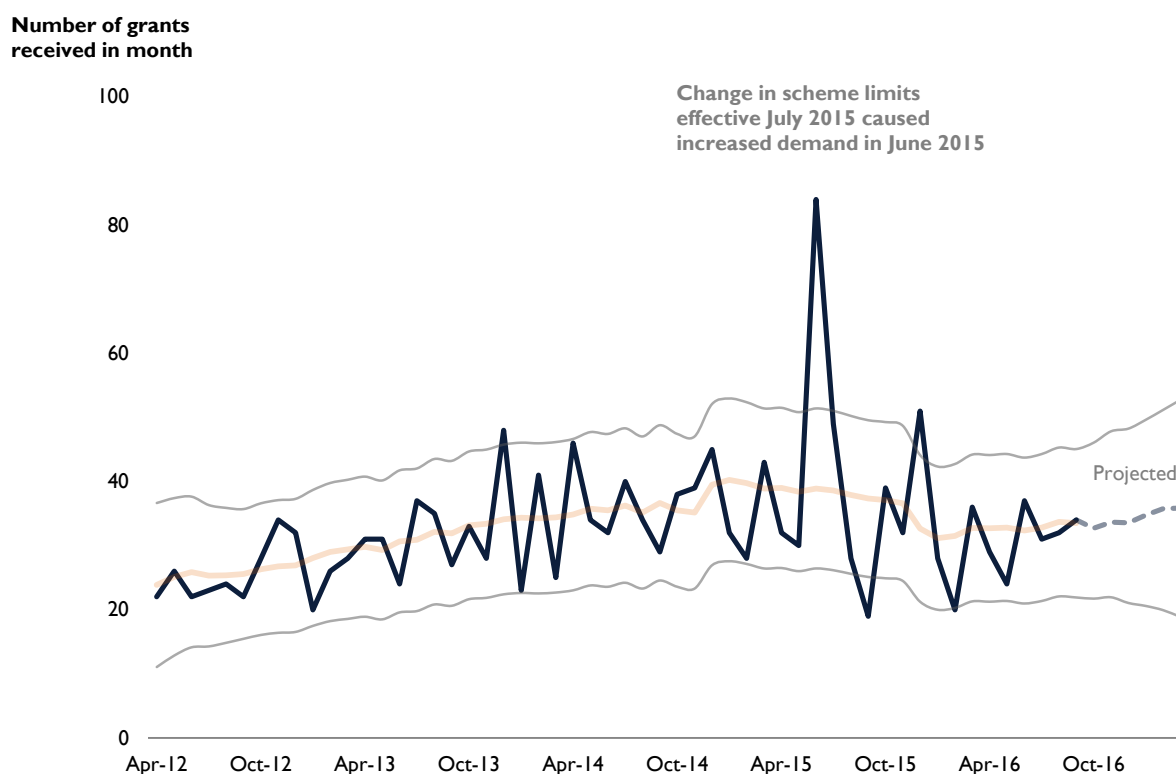


Figure 7: number of grants received in responsive mode per month, and projected future demand. Upper and lower grey lines indicate approximate 95 per cent confidence intervals for 12 month rolling windows centred on that month. The orange line is the centre of this interval, while the dashed line gives a projection based on recent data.

The surge in applications in June 2015 was caused by a change to scheme funding limits applied to proposals received from July 2015 onwards. Other than this easily explained outlier, the picture is of a reasonably stable process overlaying a gentle trend of increased volumes. The new normal is now around 30-35 responsive mode grants per month (which is an additional around 50 to 100 grants per year relative to pre-demand management levels) and it seems unlikely that this will decrease.

Conclusions

Following initial successes, the ability of the ESRC demand management policy to encourage the submission of good project ideas, discourage weaker ones and limit demand overall has diminished.

In terms of the numbers of proposals being submitted we are now back to where we started in 2011. There is some good news though, as the initial increase in the quality of proposals received has been sustained to a great extent.

We cannot point to a single source for the increased demand or ascribe it to a single cause. Increased demand is felt from all ESRC disciplines.

The indications are that changes in the ESRC funding environment are enduring, and that the trend of increased demand relative to pre-demand management levels can be expected to continue unless action is taken. The current situation is troubling.