Fast Stream Evaluation Scoping Project: Lessons Learned[1]

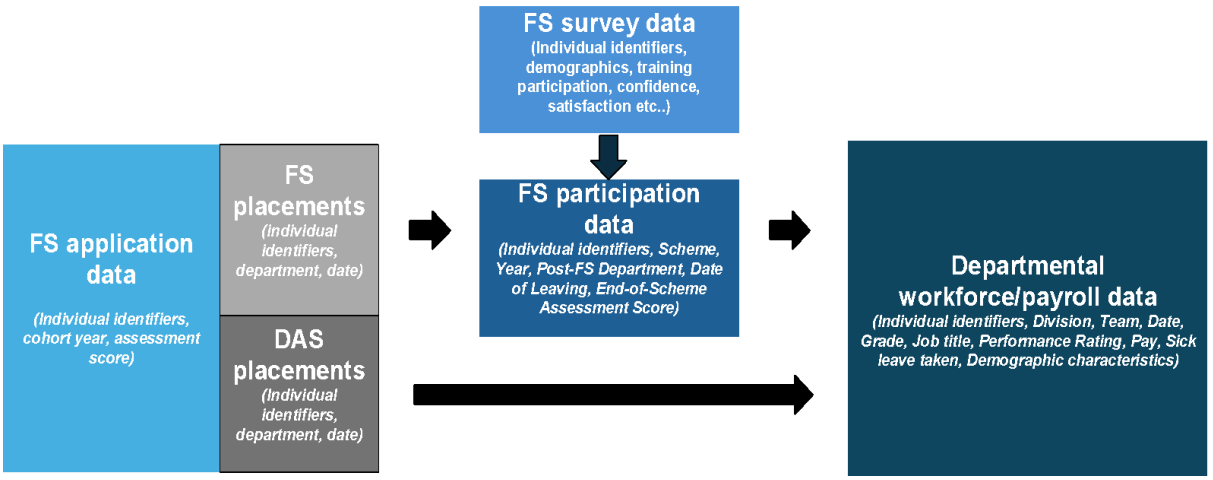
1. Introduction

This note summarises the lessons learned from a scoping project for an evaluation of the Civil Service Fast Stream (FS). This evaluation consisted of three separate analyses:

- A quasi-experimental evaluation of the FS using a Regression Discontinuity Design (RDD). This would involve comparing the workforce outcomes of a treatment group formed by those who enter the FS with an assessment centre score just above the FS admission threshold, to those in a control group composed of those who narrowly miss the threshold and are admitted to the Direct Appointment Scheme (DAS).
- An observational evaluation comparing workforce outcomes of ex-Fast Streamers against a suitable comparison group (i.e. internal appointments from the non-FS pool, or from outside the civil service) by matching on a rich set of background characteristics.
- A quantitative process evaluation, using historic FS survey data.

The note mainly focuses on the access to and availability of data in the four datasets which will be needed to conduct the FS evaluation indicated above: FS applicant data; FS participation data; departmental workforce data; and FS Survey data. Figure 1 summarises the content of these datasets and how they could be combined to carry out the evaluation.

Figure 1: overview of datasets discussed in report [2]



[1] This report was prepared under the Fast Stream Evaluation Contract between the Cabinet Office and UCLC. The report was prepared by Christian Schuster, Prof. in Public Management at UCL (Lead); Marcos Vera-Hernández, Prof. of Economics at UCL (co-Lead); and Mr. Toby Kenward (Data Scientist).

[2] Individual identifiers could include variables such as name, date of birth, or National Insurance Number

Section 2 sets out the key messages regarding access to and availability of this data, with section 3 providing recommended actions to allow a robust evaluation to be undertaken at a later date. Section 4 considers what lessons from this scoping exercise might imply for permitting other analyses of Civil Service workforce data.

2. Key messages

There is a wealth of data which has the potential to be used in an evaluation of the Fast Stream

Together the data on FS assessment scores, in-scheme and end-of-scheme FS performance in the FS participation data, post FS outcomes from the departmental data and FS survey data provide a powerful combination to identify the impact of the FS. It has the potential to give insight into the effect of the FS on a range of outcomes such as performance, promotion, retention and sick leave, over different time horizons. It could also be used to answer a wide range of questions regarding the correlates and drivers of these outcomes for Fast Streamers. For example, how much does the FS improve retention? To what extent do FSAC or end-of-scheme FS scores predict later performance? Do the impacts of the FS vary by demographic characteristics?

Existing privacy notices and consent forms place significant restrictions on the usage of workforce data for research

Implementing the RDD design requires the ability to access the FS assessment scores of candidates admitted to the FS as well as those allocated to the DAS, as well as linking them to workforce outcomes stored in department workforce databases. However, privacy notices require that personally identifiable data of unsuccessful FS applicants (which includes DAS appointees) is deleted after two years. Moreover, whilst the privacy notice allows identifying data to be kept for five years for successful FS candidates, this still limits significantly the power to detect effects on the Fast Stream on post-FS stream outcomes.[3]

In addition, the informed consent sheet for the FS Survey data doesn't permit the sharing of data which could potentially identify individuals, which prohibits sharing data with demographic variables or linking the FS Survey data with other datasets. This substantially limits the informative value of the survey data, as it prevents analysing the correlation between demographic data and indicators such as motivation and training participation; and understanding how these indicators relate to outcomes such as retention or performance. Moreover, the consent sheet currently does not allow recording survey data with unique IDs, precluding the assembly of a more robust longitudinal (panel) survey data set or the merger

[3] Given the FS lasts for three years, the current privacy notice would only allow the researcher to observe
any post-FS outcomes for two cohorts of Fast Streamers.

of Fast Stream survey with post-FS workforce data - for instance to assess how the experience on the Fast Stream of an individual (e.g. their training participation, or relationship with an Activity Manager) shapes their subsequent retention and career success in the civil service. This is key evidence to understand which features of the Fast Stream most impactfully differentiate Fast Stream outcomes from direct appointment outcomes.

Several departments signalled a willingness to share departmental workforce data, though with a strong preference for sharing de-identified data

Following consultation with thirteen departments, ten of these were willing to further consider the data request or signalled firm interest in sharing their workforce data, including some of those with large FS allocations.

To avoid sharing personally identifiable data, there was a strong preference among departments to link the FS participation data with their workforce data in-house and share the de-identified data. Whilst departments varied in how extensively they made use of their workforce data, most departments we engaged with had in-house workforce analytics capacity. There was interest among these teams in using the linked datasets to conduct additional analysis which is tailored to the needs of individual departments to create additional value from the data sharing.

Most interested departments can provide five years of workforce data

Whilst there is some variation in historic coverage of workforce data, most departments we spoke to which were, prima facie, interested in sharing data and have not restructured (e.g. merged two departments) can provide up to five years of data.

Fast Stream workforce data is available for most starters since 2017, and Fast Stream application data is available since 2019, although of course all data collected to date is subject to the restrictions of the privacy notice outlined above.

It is likely that data will be needed from most of these departments to obtain sufficient statistical power to identify FS effects

We conducted indicative power calculations to give an indication of the sample size required to detect a difference between the Fast Streamers' outcomes and those of the comparison group in an observational evaluation. The calculations rely on assumptions over which there is considerable uncertainty, namely the counterfactual outcome level (i.e. the outcome level of non-Fast Streamers), the effect size, and the number of non-Fast Streamers per Fast Streamers available in the sample. The number of departments required to achieve any overall sample size will of course depend on the number of FS cohorts available in the data to assess any particular outcome. To provide an idea of the sample size, the ten departments approached for the evaluation, who either expressed interest in further

considering the data request or agreed to share data, collectively took on around 1,260 Fast Streamers on centrally managed FS schemes between 2018 and 2020. This works out at an average combined annual cohort of around 420 per year, and around half of entrants complete the Fast Stream.

Power calculations for the RDD analysis were not computed because they require access to the assessment scores, and such access was not obtained. For the same reason, we could not check that the assumptions required for the RDD analysis (absence of bunching of candidates at the FS assessment threshold, and that candidates just above and below the threshold are similar in terms of observable characteristics) hold. As the Fast Stream assessment is changing in 2024-2025, past distributions of assessment scores are, in any case, not necessarily informative of future distributions of assessment scores and, thus, only of very limited use to assess the validity of RDD assumptions.

Coverage of outcomes of interest varies across departments

The main outcomes of interest are performance ratings, promotions, retention and sick leave.

We found that most departments record sick leave in their workforce data. At the same time, most departments do not follow a strict policy to record all sick leave episodes, and it is likely that there is a degree of underreporting.

Only a minority of departments records performance ratings in their central workforce data. Some departments do not systematically record performance ratings, and in others they are recorded in separate ad hoc files, often 'locally', for example by teams or business areas. This creates a significant challenge both in terms of effort and complexity to aggregate the information and link it to the main workforce dataset, due to inconsistencies in the identifiers used (i.e. names).

Retention within a department can be measured in all departments with workforce data (as drop-out from the workforce data). Retention within the civil service is more challenging to measure, e.g. when Fast Streamers move out from the first department that they were appointed after graduating from the FS, as well as for DAS appointees who move out from the first department they were appointed, but into another department (e.g. a department which is not part of the study and for which the workforce data is thus not available). One possible solution to this problem would be to link to the records of the Civil Service Pension Scheme as enrolee's affiliation does not depend on the particular department they are working for. However, this would require identifiers (e.g. National Insurance numbers) to enable linkages between workforce data and pension data.

Similarly, promotion within a department (i.e. within the department the Fast Streamer joins after leaving the FS, e.g. from G7 to G6) can be measured in all department with workforce data; all departments we met appear to record grades in their data. At the same time, promotion into a different department is plagued by the same measurement limitations as retention detailed above.

Outcomes on teams – e.g. to assess whether a Fast Stream graduate achieves better outcomes for teams they are managing – requires clear identifiers of teams (and, ideally, managers) in workforce data. There was one large operational department that stood out in

terms of such data, as it recorded the line manager of every employee in its workforce records. Other departments register, to some extent, sub-department identifiers in their data (e.g. through cost centre identifiers), yet vary sharply in the extent of disaggregation (i.e. whether only large divisions an individual is part of are identified, or smaller individual teams).

Data coverage is also currently an issue for demographic variables in FS workforce data, in part because this is voluntary for employees to complete. In some organizations this data is backfilled from recruitment data, thus generating strong coverage. In others, self-reported data leads to concerns with incomplete or outdated data. Altering the privacy notices for FS applicant data would however allow linkage to the demographic variables recorded in this dataset.

3. Recommendations

Based on this scoping exercise, we have five recommendations to lay the groundwork for a robust evaluation of the FS in the future:

1. Alter the privacy notice on FS assessment data to: (i) classify DAS appointees as 'successful' applicants; (ii) reclassify the data as longitudinal data, and update privacy notices to allow identifying data to be stored for ten years.
2. Revise the informed consent sheet for the FS Survey data, to permit sharing personally identifiable data and linking to other datasets.
3. Keep a centralised record of which department DAS appointees are allocated to and link this record to the FS application data.
4. When available, include the Civil Servant ID in all relevant datasets, including FS participation, DAS participation, departments workforce data, and FS survey. This will greatly facilitate any future linking of datasets. Until it becomes available, include the National Insurance Number in these datasets as a substitute for the Civil Servant ID. Ideally, this would be extended to any files that record performance ratings within departments (when they are not recorded in their main workforce dataset).
5. When the Civil Servant ID becomes available, maintain a cross walk between Civil Servant ID and National Insurance Number to be able to link to records created before and after the Civil Servant ID was implemented.
6. Maintain a record of the assessors who scored the assessments of the Fast Stream Assessment Board, with the precise linkage between assessors and applications, as this might enable a Judge leniency IV research design in the future. [4] This might require changes to the privacy notices for assessors to retain this data over the same period as other application data.
7. Work with interested departments to ensure that in the future their workforce data will be available going back for more than 5 years.
8. When measuring retention and promotion, consider that individuals might have moved out from the first department they started to work after the FS, and

[4] For instance, see https://blogs.worldbank.org/en/impactevaluations/judge-leniency-iv-designs-now-not-just-crime-studies

equivalently for DAS appointees. Hence, linking might need to go beyond the first department in which they were appointed. Consider access to the Civil Service Pension Scheme to measure retention and pay irrespective of the department where the individual is working.

9. Consider resourcing additional analysis tailored to individual departmental needs as part of a future evaluation to increase value added to departments

4. Broader suggestions for Civil Service workforce data

The barriers which need to be overcome to undertake the evaluation of the FS using workforce data may also prevent other workforce datasets being used for research purposes. Given that there will be a time lag between making changes to data collection and storage policies and having enough data to carry out evaluations, there may be value in proactively tacking these barriers now, to allow evaluations to go ahead as the need arises.

First, we suggest reviewing privacy notices to ensure that data can be used for research. In general, this will require privacy notices to permit (i) the sharing of identifying data, (ii) the ability to link to other datasets; and (iii) storing data for a sufficiently long time.

Second, there may be value in creating a culture of sharing of micro-level departmental workforce data with central departments such as the Cabinet Office, as conducting evaluations for workforce policies using workforce data will likely require obtaining data from multiple departments. One way to do this is to build up experience of conducting exercises which involve sharing of this micro-level data, ideally to conduct analysis which has value for the departments providing the data.

Third, consider standardizing the recording the team structure and line manager within the workforce datasets, and record performance ratings in such datasets. When possible, record productivity data in a way that can be linked to the workforce dataset of the corresponding department.

Fourth, after Fast Streams graduate, they apply to Grade 7 jobs which Non-Fast Streamers and non-civil servants also apply. These selection processes generate useful data that can be used to study issues around workforce in the Civil Service. These data are stored in dedicated platforms in some organizations. We recommend that the associated privacy notices for such platforms are reviewed with the view that the data can be used for research purposes in the future.

Finally, investing the resources to configure workforce record databases in a way that allows granular data (for example, monthly-individual level data) to be extracted with ease could significantly reduce the cost to departments of sharing data, increasing the value of such databases.

Annex

Indicative Sample Size Calculations for Observational Evaluation

Conducting sample size calculations for outcomes that are measured as a proportion require assumptions on (i) the ratio of the control group size to the treatment group; (ii) the value of the proportion in the comparison group; and (iii) the effect size of the intervention.

The table below shows the sample size of Fast Streamers required to have 80% power to detect the given effect size at 5% significance. The columns of the tables combine different effect sizes and ratios of the comparison group (non-Fast Streamers) to the treatment group (Fast Streamers). Because we have not had access to actual data, we compute the required samples for hypothetical outcomes for which the value of the proportion for Non-Fast Streamers could be 0.1, 0.15, 0.2, or 0.30. These should be treated as 'what-if' scenarios, as the assumptions used in the table are not informed by analysis of Civil Service data.

Table 1: indicative statistical power calculations

	Scenario 1A	**Scenario 1B**	**Scenario 2A**	**Scenario 2B**
Ratio of Non-FS:FS	3	3	2	2
Outcome 1				
Value of the proportion for Non-FS	0.1	0.1	0.1	0.1
Value of the proportion for FS	0.08	0.06	0.08	0.06
Required FS observations (years*employees)	2,179	500	2,442	557
Outcome 2				
Value of the proportion for Non-FS	0.15	0.15	0.15	0.15
Value of the proportion for FS	0.13	0.11	0.13	0.11
Required FS observations (years*employees)	3,179	756	3,571	846
Outcome 3				
Value of the proportion for Non-FS	0.2	0.2	0.2	0.2
Value of the proportion for FS	0.22	0.24	0.22	0.24
Required FS observations (years*employees)	4,298	1,104	4,860	1,251
Outcome 4				
Value of the proportion for Non-FS	0.3	0.3	0.3	0.3
Value of the proportion for FS	0.28	0.26	0.28	0.26
Required FS observations (years*employees)	5,395	1,326	6,076	1,491