Publishing Replication Packages: Insights from the Federal Reserve Bank of Kansas City[[1]](#footnote-1)

Courtney Butler

Research institutions play a vital role in generating robust research findings. However, their role in disseminating the evidence underlying those findings – particularly for the purposes of replication – is often less clear. Many economic journals are beginning to provide guidance and infrastructure for replication packages, but this is far from standard and does not account for organizations that self-publish. Researchers seeking to share replication materials must also navigate barriers such as controls around sensitive and proprietary data. Thus, there is an open question about the degree to which research institutions can and should participate in the publication of replication packages.

The Federal Reserve Bank of Kansas City has chosen to focus our resources on curation in order to balance our mission-driven orientation, security considerations, and capacity limitations. The rationale and resulting procedures described below provide one possible model for involvement in the publication process, but it is based on a unique combination of factors that influence our decision-making. Each organization’s landscape and priorities will help dictate the most suitable configuration.

# Prioritizing Transparency

The Federal Reserve Bank of Kansas City (FRB KC) operates with a mission to work in the public's interest by supporting economic and financial stability. Central to this mission is public and community engagement that emphasizes trust along with core values such as integrity and service. These characteristics point towards a strong organizational alignment with the foundational principles of replication, namely transparency.

When FRB KC first began exploring reproducibility in earnest, our researchers were sharing data on an infrequent, ad-hoc basis with full responsibility for preparing and disseminating their own replication packages. However, growing library services and evolving journal expectations drove us to reconsider our approach. An internal data preservation initiative posed questions about what types of data we should preserve and, importantly, why. As we considered the historical and administrative purposes of research data, we also examined preservation policies and practices in economic journals to better understand the state of the field[[2]](#footnote-2). There, we found a steadily increasing trend in journals requiring or strongly recommending the inclusion of replication packages as part of the publication process.

With both our mission and industry trends in mind, FRB KC ultimately decided to prioritize a high degree of transparency in our approach to sharing replication packages. Our researchers’ findings inform important economic policies and decision-making, and we determined that a focus on openness was one way FRB KC could tangibly demonstrate our ongoing commitment to integrity and public trust. Thus, we elected to establish a formal process to enable researchers to share underlying data to the extent possible.

# The Data Release Process

Researchers initiate the data release process, and the Research Library coordinates the subsequent steps. These steps include legal reviews of contracts and terms of use, information security assessments, and the creation of a comprehensive ReadMe document. The ReadMe document contains vital information such as licenses, file descriptions, instructions for usage, data source references, and fixity details to ensure long-term usability.

Currently, our researchers are under no requirements to publish replication packages; it is up to their discretion to determine when to initiate the data release process. Those decisions are often driven by a range of motivations, including journal requirements, media inquiries, collegial requests, a desire to make research widely available, and more. However, not all data can be shared in every situation. Potential barriers include code and data complexity, contractual restrictions, privacy concerns, and many more.

Despite these challenges, FRB KC confronts obstacles to sharing head-on. While many journal policies provide exceptions for situations involving proprietary or confidential data, FRB KC will often seek permission from data vendors on an ad-hoc basis. We also work to incorporate explicit language during contract negotiations that allows for replication-focused sharing. In this way, we have successfully shared data from a wide range of public and proprietary sources. Appropriate sharing is also sometimes facilitated through methods such as aggregation and synthetic data. However, there are still times when sharing is not feasible, and legal and ethical matters always outweigh desires for transparency.

Once the review process is complete, researchers have a wide range of distribution options available. Replication packages may be posted on the FRB KC website, uploaded to an external repository, emailed to a requestor, submitted to a journal, or any other means of distribution needed. Research Library staff are available to help facilitate any desired publication method, but researchers can also manage distribution themselves.

The data release process currently has a turnaround time of approximately three weeks from initiation to publication, but it can also be expedited when needed and may take additional time if issues arise. Defining and operationalizing this timeline has required ongoing relationship-building and negotiations with key stakeholder functions such as legal and information security. These discussions have centered on clearly defining researchers’ needs and balancing them within the organization’s risk mitigation framework and available resources.

# Resourcing Considerations

The curation process is completed entirely by internal staff since replication packages are considered public once they leave our internal systems. Whether posted publicly in a repository or emailed to a single well-known colleague, we recognize that we no longer have control over replication files once they have been distributed. As a result, our curation process ensures that all replication packages meet FRB KC’s standards for sharing with external audiences before being distributed across any medium.

At this time, we have elected to place less emphasis on the mechanisms for distribution so that we can instead focus our limited resources on curation for the reasons outlined above. As we explore future opportunities to expand publication and preservation practices, scalability and capacity remain crucial considerations. Every replication package requires time-consuming context gathering, stakeholder coordination, and tailored decision-making. Growing demand for this service requires that we continue to be thoughtful and intentional in deploying available resources.

# Conclusion

The Federal Reserve Bank of Kansas City's commitment to transparency and public trust has shaped our approach to publishing replication packages, and our transition from an informal, ad-hoc approach to a more structured process has helped promote secure, ethical, and effective data sharing. In this way, FRB KC research practices continue to contribute to the overall mission and values of the organization. This is especially important given that the Federal Reserve System is a long-lived institution. After more than 100 years of supporting economic and financial stability, trust in our research is intended to extend well into the future in addition to informing the audiences of today.

As other research institutions consider their role in the publication of replication packages, the overall approach should be influenced by factors such as organizational goals, risk assessments, known impediments, and available capacity. Comprehensive curation and publication services are not appropriate for all institutions, and there are many external partners and resources available to supplement where needed. However, replication best practices are maturing steadily in the field of economics and will continue to normalize with time. Research institutions that proactively consider their role and expectations in this space will be much better positioned to maintain ongoing trust and integrity in their findings.

1. The views expressed herein are those of the author and do not necessarily represent the views of the Federal Reserve Bank of Kansas City or the Federal Reserve System. [↑](#footnote-ref-1)
2. Butler, C. R. & Currier, B. D. (2017). You can’t replicate what you can’t find: Data preservation policies in economic journals. Presentation to the International Association for Social Science Information Services & Technology (IASSIST) Conference, Lawrence, KS. Available at <http://doi.org/10.17605/OSF.IO/HF3DS> [↑](#footnote-ref-2)