PPS part B first paragraph examples. These are not listed in any particular order.

*Example 1*

The project will study the evolution of the advertising industry over the period 1977-2010 (or the most recent year available within the active duration of the project). The external Red Book data have been in publication since 1964, and are available for years of the study period of 1977 onward. The years of 1976 for the Longitudinal Business Database, and 1974-1976 of the Standard Statistical Establishment List are also requested to include a few years prior to the first study year of 1977 in order to properly identify plant and firm entry and acquisition activity for the first few of the study years. In addition to producing estimates of the population of advertising firms over time, early years of advertising, client and supplier establishment data will be used as instruments for estimation. We use historical scale measures of advertisers, suppliers and clients as instruments to correct the biases introduced by the possibility unobserved local economic conditions affect both some of the covariates as well as the explanatory variable; we are, specifically, worried about the endogeneity of stock variables. Historical instrumental variables are used in generalized method of moments estimates, and the entire time series are used for fixed effects estimates.

*Example 2*

The project will study research and development as part of a complete view of the innovation process of firms over the period 1972-2011 (or the most recent year available within the active duration of the project). The Census R&D data are available from 1972 forward, and the external patent data that will be matched to the Census microdata are available from 1975 forward. The years of 1963 and 1967 of the Census of Manufacturers are also requested to capture prior period investment to be used to construct capital stock estimates from perpetual inventory calculation methods, as well as output and employment to provide instruments for stock variables in estimation. Historical scale measures of establishments and firms are used as instruments to correct the biases introduced by the possibility unobserved local economic conditions affect both some of the covariates as well as the explanatory variable. Historical measures are used for two staged least squares estimates, and the entire time series are used for fixed effects estimates.

*Example 3*

The project will study the evolution of manufacturing plant energy efficiency over the period 1963-2011 (or the most recent year available within the active duration of the project). The project will investigate plant efficiency levels and dispersion over time and its determinants, energy reporting data quality and unit and item non-response. The long time horizon is required to document the cross time variance increases, the changes in firm characteristics that may shed light on the source causes of the intertemporal changes, and in particular to overlap with the natural experiment periods of large energy price increases in the 1970’s and 2000’s.

*Example 4*

The project will study plant-level performance and pollution abatement investment over the period 1963-2011 (or the most recent year available within the active duration of the project). The external Compustat and Industry Directories data have been in publication since 1960, and are available for years of the study period. One of the concerns of PACE data program planners and data users has been the differences in survey design and potential lack of comparability of the earlier PACE surveys that ended in 1994 and the new resumed PACE survey collection starting in 2005 (with a pilot version conducted in 2004, and a single survey conducted in 1999). Census staff also recently recovered data from the early years of the PACE Survey (1973-1978) that extend the range of prior PACE data. The time series of prior data will be used for comparisons with the new PACE data, to estimate the degree of consistency between the older and newer PACE data, as well as to estimate fixed effect plant performance models. The early years of 1963 and 1967 of the Census of Manufacturers are requested to provide prior data for overall investment spending and economic activity to use in modeling the substantial increase in pollution abatement activity during the 1970s.

*Example 5*

The project will analyze changes in cluster definitions and the relationship between cluster composition and economic performance over the time period covering 1976-2011. The external Compustat data cover public firms from 1950 to the present and will be matched to overlap with the study period. Estimates will be produced of cluster-level and region-level performance growth over time. Early years of data will be used to implement instrumental variable techniques. The main identification challenge is to eliminate the bias from omitted variables that both impact cluster composition and subsequent economic performance. We address the potential spatial dependence of the residuals and of the performance of a region and its neighbors by including attributes of the neighbors as controls, and estimating a spatial lag and a spatial error regression model by maximum likelihood. To do this, early years of the Census measures by cluster and region are required for use as instruments.

*Example 6*

The project will study chemical material use and abatement spending over time, and the effects on productivity and innovation of mandatory disclosure and abatement spending over the period 1963-2012 (or the most recent year available within the active duration of the project). The external TRI data are available from 1987 forward. The project will estimate and contrast productivity in the period before TRI and after, and cover the period of the productivity slowdown of the 1970s and covering the early PACE years. The years of 1963 and 1967 of the Census of Manufacturers are also requested to capture prior period investment to be used to construct capital stock estimates from perpetual inventory calculation methods, as well as for fixed effects models to provide the longest time sequence of information possible for a plant to improve the accuracy of the estimates.

*Example 7*

The project will study the evolution of entrepreneurship over the period 1963-2016 (or the most recent year available within the active duration of the project). The external data on U.S. patents granted are available from 1963 – 2010, available for years of the study period of 1963 onward. The early years of the Census of Manufacturers will be used to properly identify plant and firm entry and acquisition activity, to produce base period capital stock estimates, and importantly to serve as instruments for estimation. We use historical scale measures as instruments to correct the biases introduced by the possibility unobserved local economic conditions affect both some of the covariates as well as the explanatory variable. Historical instrumental variables are used in generalized method of moments estimates, and the entire time series are used for fixed effects estimates. A large number of datasets are required for the project to capture the vast variety of startup firm types, to follow entrepreneurs through their work histories, and to investigate the nature of firm and individual characteristics that explain observed determinants of entrepreneurial success.

*Example 8*

The study will use data from 1977-2012. The project will investigate establishment wage dispersion over time and its determinants, including the possibility the observed increases in variance may be related to changes in data reporting and recall error. The long time horizon is required to document the cross time variance increases, the changes in firm characteristics that may shed light on the source causes of the intertemporal changes, and to validate results on the evolution of the return to firm R&D expenditures by comparing estimates for the earlier years to equivalent estimates of prior projects at the Center for Economic Studies that generated results for the 1970’s and 1980’s.

A large number of datasets are required for the project to capture wage variation across the whole distribution of firms and establishments in the economy, and to investigate the nature of firm and individual characteristics that explain observed increases in wage variation over time. In addition to the core datasets of the LBD, EC and LEHD infrastructure files, additional survey data contribute explanatory detail, where worker turnover is taken from the QWI, R&D intensity and scientific employment from the R&D survey, productivity from the ASM, BES and SAS, computer investment from ACES and the ASM, and organizational practices from the NES. Individuals’ wages and job changes are from the EHF, and their characteristics from the ICF and CPS. Matching of external data at the establishment and firm level on patents, unions and financial distress will be performed using the SSEL, GAL, and Compustat-SSEL bridge files. The BRB links firms in the economic data to firms in the LEHD data, and the U2W file facilitates incorporation of establishment based LEHD measures and probabilistic employee linkages into the LBD and Economic Census establishment data.