Project Descriptions for Register Data Access to Students

Project 710334: The labor market effects of taxes, income transfers, and labor market

Description

The overall aim of this project is to provide knowledge on the impact of several important policy changes in the Danish economy, applying real world data. The changes in policy covers three main domains: Taxes, transfers, and active labor market policies.

As to the Danish economy, we are interested in how these policies affect individual level labor market outcomes (unemployment dynamics, earnings inequality, take-up of government programs, and the types of jobs that a worker takes described by productivity, sales, and firm size). There is a lot of public and academic debate about how policies affecting the labor market work and to what extent they are effective in achieving socially desirable and economically efficient outcomes.

The tax and transfer system has changed significantly in all decades since 1980 affecting different parts of the population, e.g., both tax rates and tax brackets have changed, and many new transfers have been introduced and altered. The active labor market policies (i.e., incentivizing people to work by controlling their access to transfers) were introduced in the 1990's and have been continuously reformed since then. The project aims to provide knowledge on the impact of several important policy changes in the Danish economy, applying real world data.

To understand the effects of policies affecting the labor market and social outcomes of individuals affected by these policies we apply analyses relying primarily on variation coming from reforms of the policies.

The starting point is documenting how changes in the above-mentioned labor market policies affect: Labor market outcomes in terms of (un)employment dy-

namics, earnings inequality, and the quality/stability of worker-firm matches as measured by productivity, sales, and firm size.

The focus of the project is the working-age part of the population, but since important classes of labor market policies include child-related leave and retirement policies, we require access to the full population.

To provide knowledge on the impact of policy changes on both labor market outcomes and social outcomes using individual level data analyses we need data on:

- Demographics and education to control for differences across groups
- Income, employment, taxes, and transfers to both see who are affected by policy changes and measure outcomes
- Firms to see which types of jobs that workers select into. Firm data is important to understand if changes in worker wages are due to changes in labor market policies or changes in productivity and sales.
- Data on births is needed for examining effects of parental leave policies.

The project will use different reform changes from 1980 and onwards to establish causal inference regarding the effect of the policies. To ensure enough substantial policy changes (and include e.g. tax reforms and transfer changes in the 1980's) and be able to quantify long term impacts we need access to the full population from 1980 and forward.

Access to the full population is also necessary for one additional reason. Since we are interested in how policies affect workers choices over jobs, it is important to be able to characterize these jobs. An important tool to do this is the estimation of two-way fixed effect models, where both workers and firms will have individual level fixed effects. This requires a "connected set" of workers and firms (in a graph theoretical sense) to separate firm effects from worker effects. The estimation relies on being able to connect workers to different firms through the transitions of their co-workers and the workers these co-workers have previously been working with (network model). Therefore, the whole potential network is needed which involves the population.

Population and Registers

The Danish population in the period 1980 and onwards from the population registry (BEF, FAIN). All firms included in any of the registers delivered.

- **Work, wages, and income:** BFL, DREAM, IDAN, IDAP, IDAS , ILME, IND, RAS
- **Population and choice:** BEF, FAIN
- **Business:** FIRE, FIRM, FIDA
- **Living conditions:** OF
- **Health:** MFR
- **Education:** UDDA

Project 710352: Adverse Health Events, Human Capital, and Labor Market Outcomes

Description

The overall aim of this project is to provide empirical evidence on the interplay between adverse health events, healthcare utilization, human capital accumulation, and labor market outcomes using comprehensive individual-level data from Denmark.

The project will focus on how health shocks influence educational attainment, occupational trajectories, earnings profiles, and labor force participation, and how these effects vary across the life cycle and socioeconomic background.

There is increasing recognition that health and human capital are jointly determined and evolve dynamically over the life course. Health shocks-whether occurring early in life or during prime working years-can disrupt education, reduce productivity, and alter employment trajectories. The extent to which individuals can recover or adapt may depend on institutional factors, initial endowments, and family background.

This project will document and analyze the medium- and long-run consequences of adverse health events on individuals' human capital and labor market outcomes, along with subsequent healthcare utilization. A key focus is on heterogeneity: both in exposure to health shocks and in responses, which may depend on dimensions such as family resources, educational track or occupation.

The empirical strategy relies on high-quality administrative data that allow us to track individuals over me and observe both health events and a wide range of outcomes. We exploit quasi-experimental variation - e.g. timing of diagnosis or policy changes in treatment availability - to study causal effects.

Specifically, we aim to analyze how adverse health events affect:

- Educational choices and attainment
- Labor market participation and earnings
- Family formation
- Healthcare utilization

To do this, we will draw on individual-level administrative records covering:

- Health diagnoses and treatment histories to identify adverse events

- Educational registers to track human capital accumulation
- Income and employment data to measure labor market responses
- Demographics and family background to control for initial conditions
- Healthcare utilization records from both the primary and secondary sectors in Denmark

An important part of the project is to study health shocks, using specific diseases as concrete cases. To do so, we need to full register information in order to estimate cumulative incidences – absolute risks of developing a disease or dying at different ages. These measures require population-wide data, as they depend on information about both affected and unaffected individuals.

Population and Registers

The population consists of all individuals born before 2011 in Statistics Denmark's registers BEF and FAIN. We follow these individuals from the year 1990 to the most recent available year.

- **Work, wages, and income:** BFL, DREAM, IDAN, IDAP, IDAS, ILME, IND, RAS
- **Population and choice:** BEF, FAIN
- **Living conditions:** LPR_A_DIAGNOSE, LPR_A_KONTAKT, LPR_ADM, LPR_DIAG, OF
- **Health:** MFR, SSSY
- **Education:** UDDA

Project 710353: Economic analysis of education and human capital accumulation

Description

This project aims to generate new scientific and policy-relevant insights into how family circumstances and public policies shape human capital investments and later outcomes.

We define human capital investments broadly to include education, health, and family-related factors. This project will explore how individual, family, and government actions interact to influence life trajectories, productivity, and inequality. We examine how changes in circumstances-such as policies, shocks, or life events-affect behavior and outcomes over the life course.

We will analyze the short- and long-term effects of various potentially important factors, including school environments, health shocks, and family disruptions, on children's and youths' educational, health, social, and labor market outcomes. Our approach emphasizes understanding not only the direct effects of interventions but also the underlying mechanisms and potential spillover effects.

To inform effective policy, we consider a wide range of outcomes and mediating factors, including teacher characteristics, family income dynamics, and behavioral responses. This comprehensive perspective is essential for identifying critical periods in development and for designing interventions that promote equitable and efficient human capital formation.

To analyze the effects of human capital policies targeting children and youth, we focus on individuals from birth through approximately age 30-covering the period during which most complete their education. We examine outcomes across education, health, labor market, and social domains (e.g., test scores, grades, healthcare contacts, earnings, and benefits) from school entry through adulthood.

Understanding how family circumstances, school environments, and peer and teacher characteristics shape these outcomes requires access to comprehensive, population-wide data.

For this project, we require access to the following data sources:

- Demographic registers for individual and family background.
- Education registers, including national test results, to construct child and youth outcomes and parental education.
- Health registers to measure both outcomes and parental health background.

- Income, employment, and transfer registers to assess adult outcomes and family economic conditions.
- School-class-teacher linkages to analyze peer and teacher effects and school-level sorting.

The project will leverage multiple policy reforms from 1980 onward to identify causal effects.

Population and Registers

The entire Danish population in the period 1980 and onwards.

- Track individuals from early life through adulthood.
- Observe family structures and sibling dynamics.
- Analyze school-level variation, including peer and teacher effects.
- Capture intergenerational links and long-term outcomes.

This is done in the following registers:

- **Work, wages, and income:** DREAM, IDAP, IND, RAS
- **Population and choice:** BEF, FAIN
- **Living conditions:** OF, SSSY
- **Health:** LPR_A_DIAGNOSE, LPR_A_KONTAKT, LPR_ADM, LPR_DIAG, MFR
- **Education:** KOTRE, UDD_NATTEST_OPRINDELIGE, UDDA, UDDLAERER, UDFK

Project 710358: Population Dynamics, Household Decisions, Labor Markets, and Inequality

Description

The purpose of this project is to investigate how the changing composition of the population, household decisions about labor supply and having children, and inequality across households and genders are interrelated. To this end, we study the labor market, the marriage market, and how decisions in the two markets are interrelated using comprehensive individual-level data from Denmark.

People's work lives and their relationships are connected. Losing a job, getting hired, or getting promoted are work-life events that affect personal relationships and family decisions. For example, these work-life events might influence how couples split up household tasks and money, whether people decide to get married, stay married, or get divorced, and when and whether couples choose to have children. Similarly, the relationship status and events that occur within the family, e.g., getting a new spouse (or cohabiting partner), getting children, or getting divorced affects work-related decisions, e.g., whether and how hard to search for a job, working part-time, or working in particular sectors/jobs or self-employment. Furthermore, it has been documented that there is a positive association of age, education, and (parental) wealth among married couples, which indicates that forward looking decisions about potential partners shape the composition of couples and, thus inequality across households. Marriage has also been documented to make wealth accumulation easier, and spousal employment and wealth can be an important source of insurance against employment or income shocks.

We focus on the interplay between decisions that individuals make in labor markets i.e., whether to accept an offer or quit a job, and in the marriage market, i.e., whom to marry or whether to get a divorce. To this end, Understanding the interplay between the work and family lives of individuals is important for the optimal design of public policies such as parental leave, unemployment insurance, childcare subsidies, taxation, pension, etc. In order to investigate this interplay, we need microdata from Statistics Denmark on

- Worker characteristics: We need detailed information about both educations taken before labor market entry and later on the job (e.g. MBA-type educations). We need this information because educational attainment is a widely-studied and important predictor of marriage formation, and hours worked as well as other worker characteristics (e.g., participation, experience, wages)

are the result of joint decisions processes within the family, e.g., how much to work in the labor market.

- Firm information: We need detailed firm information because firms are an important catalyst of gender differences in labor market outcomes and they are often the target of policies, e.g., board quotas.

- Workers labor market histories: We need individual labor market histories to understand how periods of employment and unemployment affect marriage formation and marital stability.

- Wealth: Wealth is both an important predictor of marriage formation and an asset that households jointly accumulate as a result of their choices. It is an important dimension of heterogeneity across households that we need to take into account. We capture wealth and wealth accumulation using information on assets and debt that are available from income registers.

- Family information: we need detailed information on marriages (and cohabitating couples), children within these families, and divorced couples from the observing family structures and how they change over time.

- Childcare: We also need information from childcare registers. Specifically, if children before school age are in an institution or at home. Observing how families organize childcare is key for understanding joint labor supply decisions.

We study both the labor and the marriage market which requires population-level microdata from Statistics Denmark We investigate how the changing composition of the population (e.g., who marries, who marries whom, and divorce), household decisions (labor supply, fertility), and inequality across households and gender are interrelated. To analyze choices related to the marriage market, we need to observe the full population to calculate how likely types of couples form or dissolve. To understand how choices in the labor market are related to the family, we need information from the employer side and about competition in the labor market.

Population and Registers

The full population of adult people on the labor market (older than 18 but less than 70 years) because the number and characteristics of people in the market probably matters for the outcomes and we need to compare those that are in e.g.

marriage/employment to singles/non-employed. However, since children in the marriage or outside is important for labor market outcomes, we will also need detailed information on all children (below the age of 18). Full register information.

All firms in Denmark, since we need to track all jobs for all workers. This means that we need information on all firms included in the different registers.

- **Work, wages, and income:** AKAS, AKM, BFL, DREAM, FORMAND, FORMBIL, FORMEJER, FORMGELD, FORMPERS, IDAN, IDAP, IDAS , IND, RAS
- **Population and choice:** BEF, FAIN, FTDB, (FTBARN)
- **Business:** E_CVR_SE, FIDA, FIKS, FIRE, FIRM, MOMS
- **Living conditions:** BARSELSDAGPENGE, BOERNFB, BOERNINS, BOERNSB, DAGI, DAGTIL_BOERN, DAGTIL_INSTITUTIONER, SGDP
- **Education:** KOTRE, UDDA, UDDINST, UDFK, UDGK, VEUV

Project 710359: Determinants of firm behavior and their impact on performance

Description

Given changes in important economic concerns over the last decades the overall aim of this project is to provide knowledge about the determinants of firm behavior and their impact on firm performance.

Over the last decades, firms have been subject to continuous changes in the economic environment in which they are operating - from improvements in technology, changes in consumer demands and needs, to changes in the institutional and legal landscape. Robotics and artificial intelligence are examples of the most recent technological trends, while the increasing policy focus on the green transition has brought with it changes in the institutional setting. How do such changes affect firm behavior and performance, and what are the impacts on the overall economy?

To overcome the challenges, and reap the opportunities, from such changes, firms must dedicate resources to innovation and Research and Development (R&D) to achieve growth. Thus, it is important to understand what determines firms' innovative efforts and outcomes, and how they relate to firm performance, not the least because this has implications for workers' outcomes, industry dynamics, and the economy at large.

An important factor that must be considered in the analysis is the market structure of the industry i.e., is the industry consisting of many small firms, few big firms or combinations. Big firms may have market power in both domestic and international product markets and in labor markets. Firms' market power has been increasing over time leading to various distortions in the economy.

Given the purpose outlined above, this project seeks to provide empirical evidence on the following broad set of questions:

- What determines firms' choices of innovating (e.g., by investing in new production processes, or introducing new products) or adopting new technologies?
- What determines firms' internationalization decisions, e.g. regarding participation and sales on export and import markets?
- How do firms react to changes in the economic and political environment in which they are operating? Moreover, we will shed light on how these decisions and choices affect firms' performance, their workers, and broader economic outcomes, such as competition and growth.

To provide insights into these research questions, we will need access to the following microdata from Statistics Denmark, with full register information

- Firm characteristics: Basic firm-level information and accounting variables, to derive different measures of firm performance, including measures of firm productivity. Information on firms' expenses on R&D and innovation, to measure innovative efforts and outcomes. Information on the energy consumption of firms, and different energy sources that they employ, to measure firms' exposure to the green transition, firms' improvements in energy efficiency, etc.

- Products, sales and exports: Detailed information on the product portfolio and product-level sales since such information is crucial to investigate firms' market power on specific product markets. Information on firm-level exports and imports, to measure firms' activity on and exposure to international markets, as well as their exposure to trade policy shocks

- Information on employees: We need access to full register worker-level information, including occupations, age, gender, income and education etc. This is needed because the characteristics of a firm's workforce will directly affect firm-level performance, as well as determine a firm's capacity to adjust to changes in the economic environment. Furthermore, such information is crucial for measuring how firm behavior affects workers.

Population and Registers

Information on all Danish firms included in the different firm registers, i.e., full register information.

Information on the Danish population aged 15-75 years in the period 1980 and onwards from the population registry (BEF, FAIN). The population will be created an administrator or the researchers on the project.

- **Work, wages, and income:** BFL, IDAN, IDAP, IDAS , IND, RAS
- **Population and choice:** BEF, FAIN
- **Business:** FIRE, FIRM, FIDA, VARS
- **International trade:** UH_VARER, UHDI
- **Geography, environment, and energy:** ENERGI
- **Education:** UDDA, FUI, FUI_FORSK