RESEARCH STATEMENT

Felix Wellschmied
Job Market Candidate
Department of Economics, University of Bonn
http://wiwi.uni-bonn.de/hump/wellschmied/index.html

Wages and employment opportunities change constantly during a worker's life. Wages at labor market entry already differ greatly among workers, and workers' wages change frequently during their working life. Similarly, workers regularly change employers, sectors, or become unemployed. Asymmetric information and limited commitment in the insurance market and frictions in the labor market make it unlikely that markets provide first-best outcomes. Imagine we knew the specific sources and scales of different risks that workers face in the labor market. Moreover, imagine we knew how the government should insure workers against these risks by accurately balancing insurance against incentive effects. The social gains of this knowledge would likely be tremendous. This information would be beneficial in that workers could be better insured against the large risks from the labor market. Moreover, it would also allow implementing a better allocation of workers by shortening unemployment spells and reducing poor matching in the labor market. My research contributes to a better understanding of these issues. This research statement divides my research into four broad topics: income insurance, the sources of wage inequality, aggregate labor market risk, and worker misallocation. In each section, I describe my current research, relate it to the broader research project, and provide an outlook of how my intended research in the near future enhances our knowledge regarding the above issues.

1. Income insurance

To insure households against labor market risk, governments provide some income support to households in need. To identify needy households, many programs grant benefits only to low income households whose wealth is also below certain thresholds. In my job market paper," The Adverse Effects of Asset Means-Testing Income Support," I show the implications of this asset means-test in the US case.

To study households' dynamic responses to different earning risks in the presence of means-testing, I use a structural, small open economy model with incomplete markets. Households' earnings are subject to idiosyncratic shocks that differ in their persistence. At labor market entry, households draw their permanent innate earnings ability. During working life, average earnings grow, households face persistent shocks to their labor market opportunities, and they also are subject to large but transitory earning shocks which arise from unemployment.

I show that asset means-testing leads to a nontrivial trade-off in this framework: On the positive side, for a given amount of government expenditures, the means-test allows allocating relatively high allotments to those who have no private means to cover their needs and are in most need of the support. I refer to this as a desirable insurance property. In addition, households with low assets tend to be those who are young and have low innate earning abilities. Therefore, the means-test allows redistribution of resources to households with low earnings. On the negative side, households react to the means-test and choose to increase consumption and trade-off precautionary and retirement savings against the eligibility for the income support programs. These incentives are particularly large for households with low innate abilities. Calibrating my model to data from the Survey of Income

and Program Participation, I show that some of these households choose to impoverish themselves and miss private means to finance consumption during retirement or after poor labor market outcomes.

To quantify the welfare effects of these different forces, I consider a reform that abolishes the asset means-test but keeps the income thresholds and total program expenditures constant. From the perspective of a yet unborn household, such a reform is not desirable. To disentangle the different effects, I consider an alternative expenditure neutral reform which keeps the total amount of transfers conditional on workers' age and earnings constant. Now, a yet unborn household is willing to pay 0.73 percent of life-time consumption to abolish the means-test. Put differently, all welfare gains from the means-test arise from transfer redistribution towards young households and those with the lowest innate abilities. The positive insurance property of the means-test is out-weighted by the negative incentive effects on savings which it creates.

State dependent transfers, and therefore the preferred policy, may sound infeasible at first. However, the current system already incorporates this feature. Households typically receive transfers from the *Special Supplemental Nutrition Program for Women, Infants and Children* typically when they are young and transfers from *Supplemental Security Income* when they are older. Moreover, income is deducted from transfers and the government can use these deductions to obtain the amount of redistribution which it finds optimal.

Future Research: My job market paper finds that an asset means-test allows the government to redistribute income towards households with low innate abilities. Related to this, Conesa Krueger study the optimal progressivity of the income tax code where the government balances the welfare gains from redistribution against the losses arising from reduced hours worked of high ability households. Extending the above framework by a labor supply margin would allow me to compare the welfare costs of progressive income taxation and an asset means-test that arise from the same amount of redistribution.

2. Sources of wage inequality

Residual wage inequality is already large at labor market entry and grows even further over a cohort's life-cycle. In the cross section, typical Mincer wage regressions can explain, at most, 40 percent of wage inequality. In our paper "Quantifying the Contribution of Search to Wage Inequality," which is forthcoming in the *AEJ: Macroeconomics*, I, together with my fellow graduate student Volker Tjaden, ask how much of wage inequality can be explained by search frictions. From workers' perspective, asking this question sheds light on the risks workers face over their life-cycle. Additionally, it helps us to understand how much higher output could be if we could allocate workers to their most productive uses.

We find that search frictions explain only 16 percent of overall wage inequality, substantially less than suggested by previous literature. Why do we find that search frictions are less important than previously suggested? Using different pieces of evidence from the *Survey of Income and Program Participation* together with a structural search model, we show that non-value improving job to job transitions are an integral part of US labor mobility. These transitions significantly alter our understanding of the labor market.

Introducing non-value improving transitions decreases the inferred job offer arrival rate, increases workers' reservation wages and decreases the inferred dispersion of the wage offer distribution. We show that a more standard on the job search model can also rationalize large

overall wage inequality, yet it attributes a much larger share to the search friction. While both types of models can create the same worker flow statistics, we show that our preferred model matches better workers' wage dynamics. Most importantly, it is consistent with the large share of job to job transitions that results in wage loses and small average wage gains resulting from these transitions.

Our model allows us to decompose wages over the life-cycle into worker heterogeneity, job effects, and measurement error. Already at labor market entry, worker heterogeneity explains more than 70 percent of wage inequality. The fact that residual wage inequality increases over a cohort's life-cycle suggests that workers receive persistent shocks to their wage potential. Our structural approach allows us to infer the size of these shocks and their contribution to wage inequality. As a consequence of these shocks, at age 55, worker heterogeneity explains more than 80 percent of wage inequality.

Future Research: Our approach shows that worker heterogeneity is the key driver behind wage inequality. However, we do not provide the source of this heterogeneity. While there is a large literature studying determinants of workers' wages at labor market entry, there is little research investigating the sources of persistent shocks to workers' wages during their working life. Our approach shows that this is a quantitatively important source of wage inequality and is worthy of future research. Particularly, health data may provide the opportunity to study shocks to workers' productivity.

3. Aggregate labor market risk (work in progress)

Aggregate fluctuations are one of the largest non-permanent labor market risks which workers face. During recessions, workers are more likely to be laid-off, the probability of reemployment is lower, and job to job transitions fall. I contribute to the understanding of these phenomena in two current projects where I exploit, together with several co-authors, a new data set on plant level dynamics in Germany.

In the more advanced of the two, "Cyclicality of Job and Worker Flows: New Data and a New Set of Stylized Facts," I am working together with Ruediger Bachmann, Christian Bayer, and Stefan Seth. We start from the observation that worker reallocation and its sub-components, accessions and separations, take place predominantly during booms. First, we ask whether procyclical job reallocation is the source for the procyclical worker flows. We find that only half of the procyclical accession rate and almost none of the separation rate can be explained by cyclical changes in labor demand. Instead, procyclical worker churn is the key to understand procyclical labor reallocation. More specifically, to quantitatively understand procyclical worker flows, we need to understand why plants achieve the same employment growth rate with 20 percent more worker turnover during booms than during recessions.

Next, we address the source of procyclical churn. In the literature, two categories of theories exist: First, workers sort towards more productive plants during booms, and second, workers sort towards jobs with lower mismatch (unrelated to plant observables). We find little evidence for the first set of theories: The accession and separation rate increase to similar extent during booms across plants with different observables, e.g., size, age, and average pay.

I recently started to work on a second project, together with Ruediger Bachmann and Christian Bayer, which studies the heterogeneous responses of workers with different skill levels to the business cycle. A large literature shows that low skilled workers are more

cyclical sensitive; their employment shares growth during booms. Our data allows us to study job and worker flows with regard to two different skill measures, education, and work task.

We find that differences in labor demand drive the cyclical sensitivity of low skilled workers. Particularly, workers without formal education and workers conducting tasks which require routine manual skills face a job destruction rate which is more volatile and more closely related to GDP than high skilled workers. Surprisingly, the cyclical properties of the job creation rate are similar across worker groups. Currently, we are discussing possible explanations for these different flow dynamics. In a second step, we want to think about policy interventions which may protect low skilled workers from cyclical labor demand.

4. Worker misallocation (work in progress)

The project entitled "Labor Productivity and Job and Worker Flows in West and East-Germany" studies the source for the permanent productivity difference between the two regions in Germany. Together with Ruediger Bachmann and Christin Bayer, I show that labor productivity in East-Germany converged rapidly in the first years after reunification, but stays 30 percent below the West-German counterpart since 1994. Such pattern of regional non-convergence in labor markets is not unique to Germany and can be found in many other countries (Italy's ``Mezzogiorno,'' the US' ``Rust-belt,'' etc.). However, we believe the German case is particularly interesting because of the geographical proximity of the two regions, the nearly identical institutional setting and a clear definition of a time period during which we should observe convergence.

For this sake, we draw on the plant level data set outlined in the previous section. We show that several theories proposed by previous researchers fail to explain the non-convergence in factor productivity. Differences in factor productivity can be found in all major industries, the capital stock in the production sector is higher in East-Germany since 2000, and average worker skills are higher. Comparing the plant size distributions, we find that the data is consistent with an almost parallel shift of average plant productivity by 30 percent.

One difference between the two regions is that job flows are consistently 20 percent higher in the East. Moreover, the churning rate is consistently lower. Linking this to worker mobility, we find that workers in the West are more successful to sort into higher paying jobs over their life-cycle. We rationalize this finding with an on the job search model with endogenous search efficiency. Because jobs are destroyed at higher frequency in the East, workers choose to search less on the job, and remain in lower productive matches compared to the West. To the best of our knowledge, this is the first paper which identifies high job reallocation as a source of lower factor productivity.