

**The Effect of Unemployment Insurance Payments on the
Unemployment:
Comparative Analysis of US and Germany cases**

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A Thesis

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ABSTRACT

This econometric and theoretic analysis examines the impact of Unemployment Insurance benefits on unemployment looking at cases of the US Emergency Unemployment Insurance Program of 2008 and German Unemployment Insurance Program Hartz IV. The first part of the paper is an empirical work that uses Current Population Survey data to examine the duration of unemployment spells for those individuals who have regained employment after being unemployed and receiving unemployment compensation from a longitudinal sample of employed workers in 2014 and 2015. The key finding is that after the expiration of program the average duration of an unemployment spell decreased by .68 weeks. I also find that for both groups of workers (those who receive UI benefits and do not receive), the expiration of the program had a positive impact on their unemployment by decreasing the duration of the unemployment spell. The second part of the paper focuses on the theoretical analysis of the German case and identifies the main reasons for the successful implementation of the Hartz IV effect on the German economy. Besides identifying positive aspects of the UI program, it also focuses on negative effects of UI. The discussion parts provides the analytical analysis of the comparison of UI program in the two countries.

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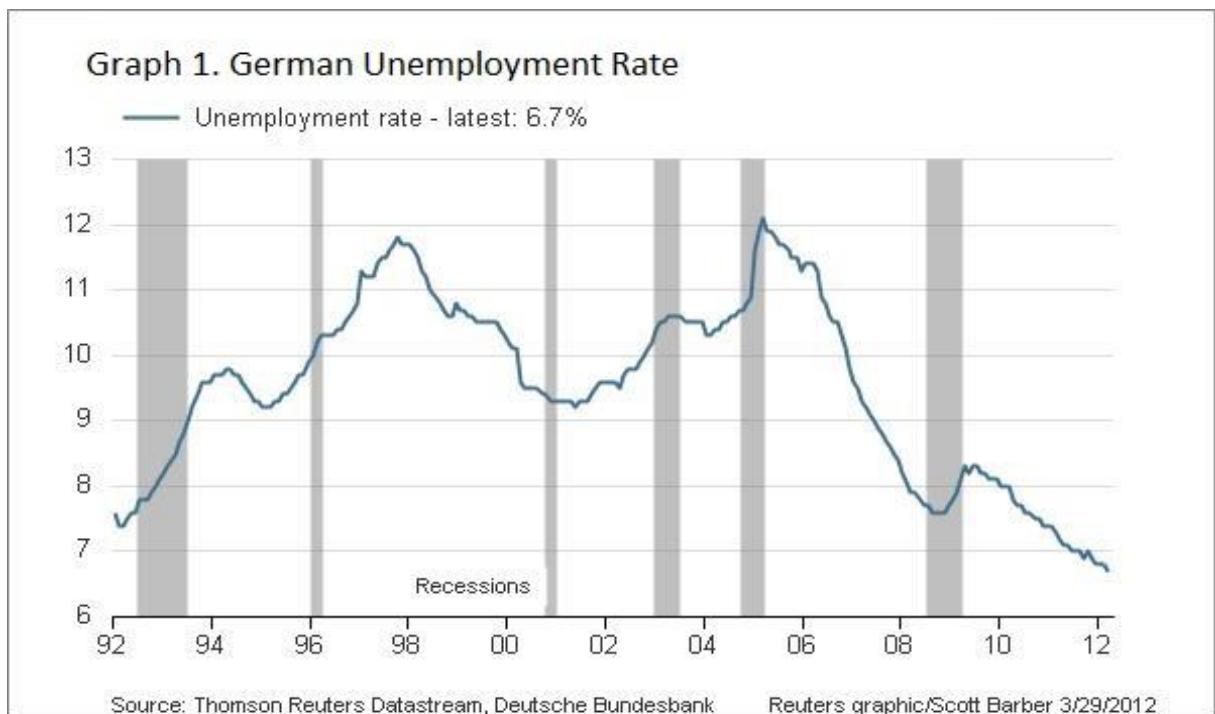
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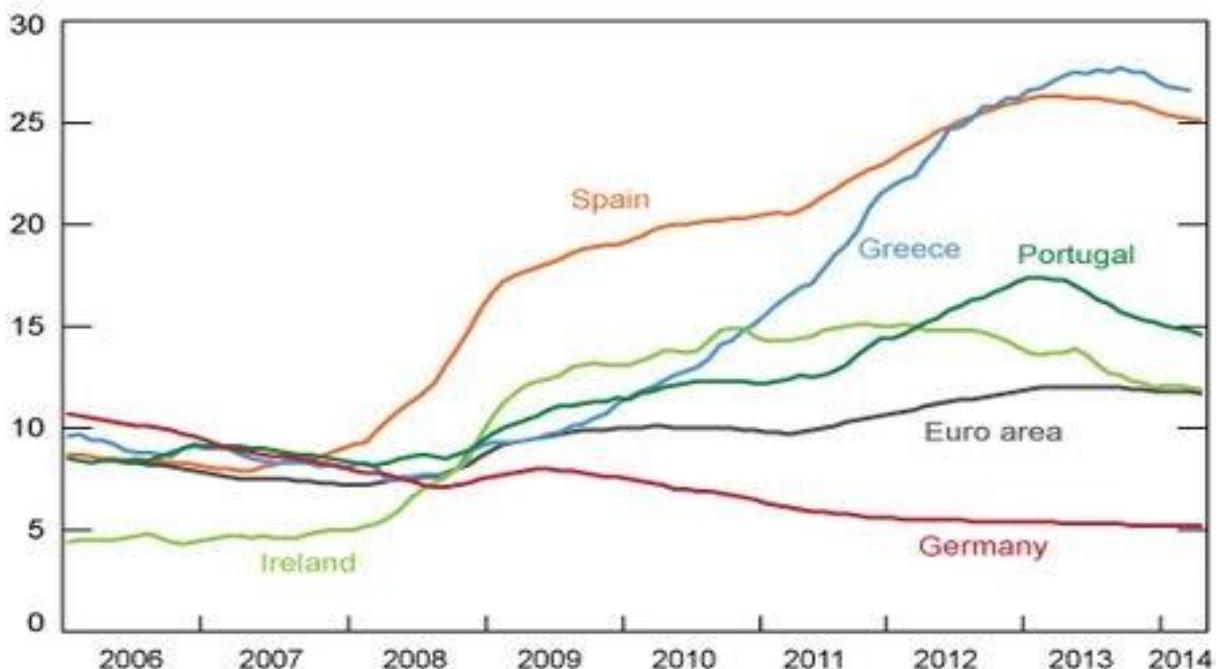
Chapter I. Introduction

Over the period from 1970s to 2000s one of the most powerful and economically developed countries of Europe, Germany, had been experiencing the steady unemployment growth and output fall. This case was not extraordinary for that time; Germany was one of the leading examples of the gaining momentum of the Eurocrisis. Not only was overall economic growth performance depressing, but the employment situation was especially disadvantageous. The downward unemployment and overall economic situation required some immediate actions: then chancellor Schroeder appointed a commission for labor market reforms headed by the head of the human resources at Volkswagen, Peter Hartz. The commission was ordered to develop a plan for reducing unemployment and restoring German economic might and power. After Schroeder, his successor Angela Merkel continued to implement, develop and modernize Hartz reforms. The final phase of the Hartz reforms, so-called “Hartz IV”, which is believed to be the most modernized and most successful, went into effect in 2005. A few years after the Hartz reforms went into effect, Germany had halved its unemployment rate (Graph 1), while other member countries of the Eurozone have remained with the same or even worse numbers for the unemployment rate.



Unemployment measures proved to be so successful that when a few years later the Global Financial Crisis significantly undermined labor markets' situation in the European countries, Germany's unemployment rate not only stayed below the European Union level, but also continued to show a decreasing trend (Graph 2).

Graph 2. Unemployment Rate of European Countries
Percent



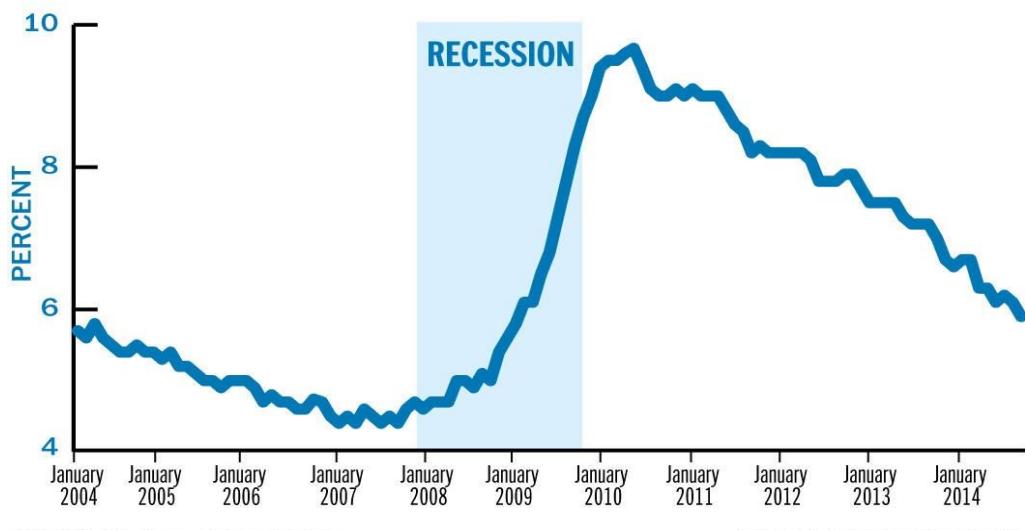
Sources: Haver Analytics; Eurostat.

Even though Germany's case proved to be an extremely successful example of implementation of labor reforms, it is not always as successful and efficient. The implementation of the Emergency Unemployment Compensation Program in the United States as the response to the Great Recession is a good example of negative effect of labor reforms on the employment. In 2008, the US Congress implemented the Emergency Unemployment Compensation program that extended unemployment benefit payments from 26 weeks provided by the majority of states up to 73 weeks of benefits, and up to 99 weeks in some states where the unemployment rate was especially high.

The intention of the program was to give unemployed workers more time for the job search during time of the crisis in order to decrease the turnover and secure workers' new employment as finding a new job that will match workers' level of skills would decrease the probability of workers to get unemployed again. Even though the program's main goal was to

decrease the rate of turnover, decrease the unemployment in general and sustain unemployed workers level of consumption, it did not turn out to be as successful as the Germany's initiative. Many scholars have argued that this Program only have worsened a crisis on the labor market motivating people to stay unemployed longer until the moment of the exhaustion of unemployment benefits. Graph 3 suggests that the unemployment rate not only did not show any decreasing trend after the implementation of the Emergency Unemployment Compensation program, but also continued to rocket. Besides, the duration of the unemployment spell escalated sharply as can be seen from Graph 4, which shows the trend in the duration of unemployment in US.

Graph 3. US Unemployment Rate.

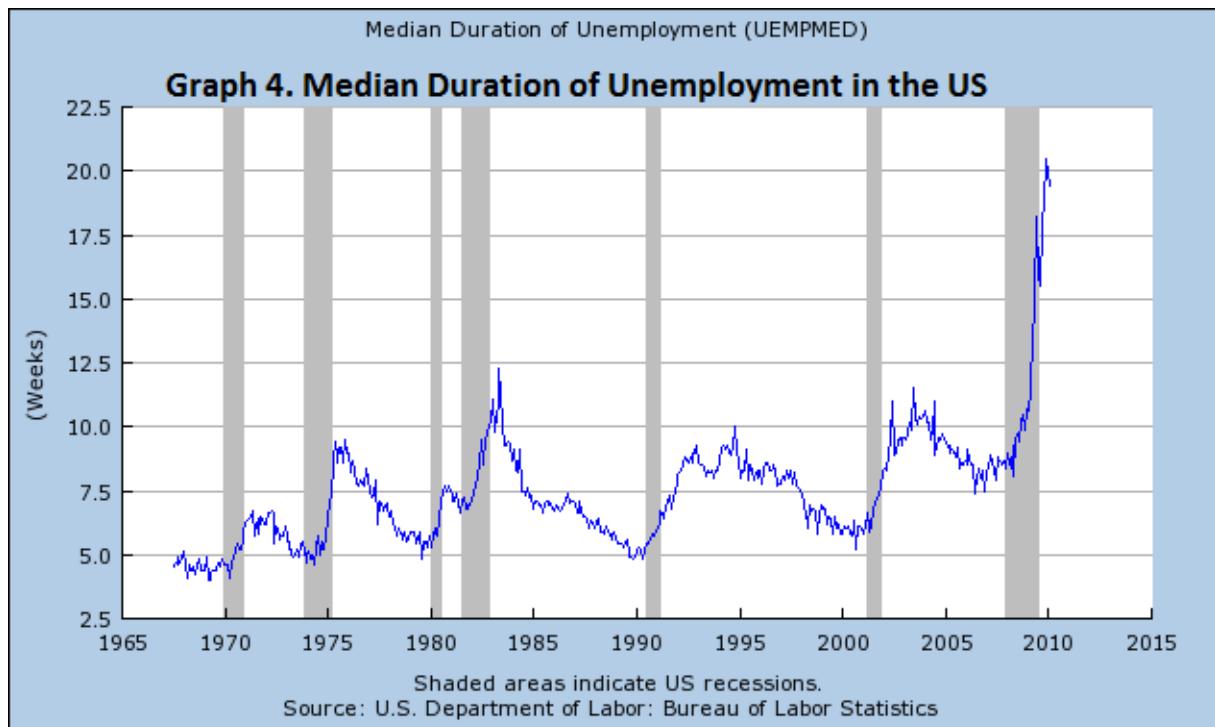


SOURCES: U.S. Bureau of Labor Statistics

DESERET NEWS GRAPHIC

At the end of 2013, Congress decided to terminate the Emergency Unemployment Compensation Program. Thus, the duration of UI benefits in all states was lowered to their initial duration of 26 weeks. Even though out-of-job population needed some incentive to take jobs, this decision was quite controversial. Some economists supported the decision, arguing that the economy had improved since the period of Recession. So the unemployed find new jobs faster than before and they no longer needed extra time. Others instead voiced a concern that “without access to benefits unemployed workers will stop searching for jobs and will exit

the labor force instead" (M.Hagedorn, I.Manovskii, K.Mitman, p. 3)¹. One of the main questions in this case is what was the reason of such a dramatic change of US Government policy on unemployment insurance? Was it a response to the improvement of the labor market situation? Or was it intended as a motivational push for out-of-job workers to increase their incentive to get back to work sooner? In the empirical part of my thesis I plan to examine the effect of this reform on the situation in the US labor market and whether this initiative resulted in lower unemployment rate and shorter duration of the unemployment spell or not.



Overall, these two cases demonstrate how well-intentioned unemployment reform can result in nearly full employment in one country and new labor market crisis in another. Comparing these two cases led me to my main research question: since both Germany and USA had common goal of decreasing unemployment through the unemployment benefits measures, what caused such a difference in the results? In order to fully understand the

¹ Hagedorn, M. and I. Manovskii (2008): \The Cyclical Behavior of Equilibrium Unemployment and Vacancies Revisited,"American Economic Review, 98, 1692{170}.

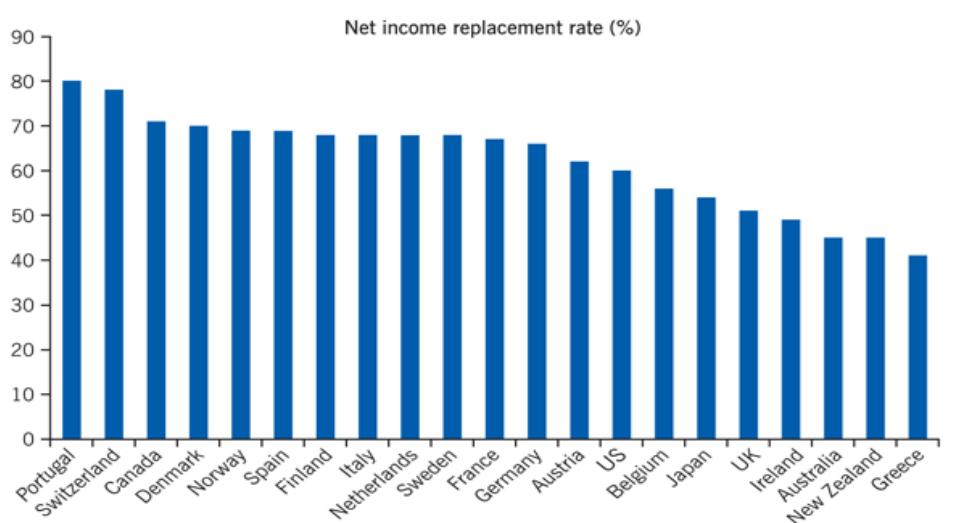
concept on Unemployment Insurance benefits and to see the effect of UI on unemployment from two different perspectives, I decided to examine both, Germany and US cases.

By conducting this research, I plan to answer following questions. What were the mechanisms behind these labor market reforms and is there a strong correlation between those reforms and a significant change in the unemployment? If it is true and reforms are accountable for either stabilization or destabilization of the employment situation in the country, what mechanisms and aspects of unemployment were affected by reforms? And the main question is why well-intentioned reform halved the German rate of unemployment while in the US unemployment rate continued to set records of high unemployment? What are reasons behind the fact that in one country unemployment benefits resulted in a “jobs miracle” while in the other it results in double-digit rate of unemployment? The findings of my study may either challenge or reinforce the skeptical view on the labor market reforms in general and those affecting unemployment benefits in particular.

Chapter II. Theory of Unemployment Insurance Payments

All developed countries have unemployment insurance programs that provide protection for workers during the duration of unemployment spell. These payments usually prevent the unemployed that involuntarily lost their jobs from falling into poverty during the process of the job-search. Qualifications criteria, the level and duration of unemployment benefits usually vary by country, economics condition, etc. Unemployment insurance programs also secure the country's economy during periods of recession and crisis. Even though the main goal of benefits is to enable those who lost their jobs to sustain a decent level of living during the job search, unemployment benefits also have side effects depending on their size, duration, qualifications criteria etc. Figure 1 shows the trend of the distribution of unemployment insurance payments in developed countries around the world. For example, too generous unemployment payments might result in lengthened duration of workers' unemployment spells, while smaller unemployment payments can force workers to accept positions that are below workers qualifications and thus cause layoff later. Thus, the challenge of unemployment insurance programs is to secure a decent level of living for unemployed workers while minimizing side effects.

Figure 1. Net income replacement rates in the first year after job loss in 21 developed countries varied considerably in 2005 (%)



Source: Burtless, G., and T. Gordon. "The federal stimulus program and their effects." In: D. B. Grusky, B. Western, and C. Wimer (eds). *The Great Recession*. New York: Russell Sage Foundation, 2011; pp. 249–293 [1].

II.I The structure of Unemployment Benefit Programs in Advanced Economies

Even though unemployment insurance programs in developed economies share main features such as main goals, targeted population and main effects, they also vary in details due to differences in features, size and peculiarities of the economies. The most important aspects of unemployment benefits programs that vary from country to country are the benefits level, the duration and eligibility criteria.

Even though the benefits level usually depends on the level of past income of worker or on the average national earnings, it varies dramatically across countries. The most widely used method of calculating the benefit level is based on the replacement rate, which is “the percentage of a worker's pre-retirement income that is paid out by a pension program upon retirement”². Figure 1 demonstrates the wide range of replacement rates across developed countries. This figure is a great example of how being based on the same method of calculation benefits can vary dramatically, from 40% in Greece to 81% in Portugal, with the mean around 60%.

As for the eligibility requirements, those tend to vary from country to country. However, the majority of developed countries tie the eligibility for unemployment security to involuntarily displacement from job, active search for new jobs and official registration of the unemployment status at the government unemployment office. Usually, there is a required minimum period that a person spent working before being discharged from job to become eligible for unemployment benefits. The length of this period varies across countries: for example, in the USA to qualify for unemployment benefits, a person should have worked for at least one quarter in the previous year. In Norway there is no required period of time. However there is a minimum level of earnings that are required for person to qualify for

² Replacement Rate. (n.d.). In *Investopedia*. Retrieved November 14 2016, from <http://www.investopedia.com/terms/r/replacement-rate.asp>

benefits. Some countries, such as Australia, have no requirements for the length of previous employment, while others have a significant list with eligibility criteria.

Another criteria for qualification for unemployment benefits is the waiting period, which is the period of time between when person was discharged from the job and when he or she can start receiving benefits. This waiting period usually takes from 3 to 14 days for the majority of countries, while for some countries there is no waiting period at all.

If the eligibility criteria and levels of unemployment benefits have some fixed set of requirements, the benefits duration can vary dramatically due to the wide range of economic aspects that affect it (determine it). Some countries such as Belgium and New Zealand have no limit for unemployment benefits, some set few months like the US (26 weeks) and some extend those to 24 months (Germany). In some countries, the duration of unemployment payments is the same for all workers, while in other it varies by job type, field, age and etc. In addition, the duration of unemployment insurance payments might vary during different periods of the business cycle. Canada varies the duration of benefits based on the level of the regional rate of unemployment, while Poland does so based on the national average. Overall, it is evident that benefits duration varies dramatically across countries.

II.II Effects of Unemployment Benefits on Economics

It might seem at first that the most evident effect of unemployment benefits is an effect on the unemployment rate and economic growth. However, as discussed earlier, unemployment benefits tend to have many side-effects that affect many areas of a country's economy. Below I'll discuss those in more details.

Effect on Poverty

Since one of the main incentives is to prevent the unemployed workers and their families from falling into poverty, it is clear that unemployment payments will affect the poverty level. By enabling workers who lost jobs to meet their consumption needs, unemployment benefits prevent poverty and reduce the poverty rate when economy experiences downfall. Thus, programs prevent the decrease in the poverty rate.

Effect on Unemployment

One of the main incentives of unemployment benefits is to secure workers during job search, thus giving them more time to find a job with adequate level of qualification and securing from accepting lower-skilled jobs. Therefore, unemployment benefits provide opportunity for secure placement and lower the possibility of turnover and layoff in the future.

However, there is also a side effect that is associated with the level of benefits: in some advanced economies the level of benefits is higher than the possible gain of finding a new job, especially for long-term unemployed. If unemployment benefits' level is higher than the minimum wage, this will result in decreased motivation for job-search. In some cases the higher level of benefits also can be associated with a longer period of unemployment due to the decreased incentive to find a new job.

Besides, in some cases of long-term unemployment, unemployment benefits do not make a worker any better off. One of the most often faced challenges is employer's

discrimination. Rand Ghayad and William Dickens in their research ³ showed that employers are least likely to offer job to someone who has been unemployed for more than 6 months. They explain it by the common assumption among employers that longer unemployment indicates some problems of the employee. Facing the realities of the contemporary labor market, chances are not that high that long-term unemployed will exit unemployment spell once the program has expired. Thus, it is clear that this particular part of job-seeking population is hit the hardest by such changes.

Effect on Consumption and Economic Growth

Besides unemployed workers financial security, one of the main goals of such programs is to provide some source of income that will maintain workers' consumption at some level during the loss of earnings period. Due to the multiplier effect, decreased consumption results in decreased economic growth, therefore one of the main effects of benefits is a microeconomic effect. Loss of main source of income will most definitely result in lower economic activity and therefore decreased spending of the unemployed part of the population, which furthermore will result in slower economic growth. Lower economic activity of significant part of population will most likely result not only in reduced economic growth, but moreover in fewer new jobs. According to the findings of report by Economic Policy Institute, "continuing the extensions through 2014 would generate spending that would support 310,000 jobs. If this program is discontinued, the economy will lose these jobs."
(Economic Policy Institution report from November 7, 2013)⁴. Therefore, it is evident that the

³ Ghayad, Rand and Dickens, William T., What Can We Learn by Disaggregating the Unemployment-Vacancy Relationship? (October 1, 2012). FRB of Boston Public Policy Brief No. 12-3. Available at SSRN:<http://ssrn.com/abstract=2285075> or <http://dx.doi.org/10.2139/ssrn.2285075>

⁴ Shierholz, Heidi and Mishel, Lawrence , "Labor Market Will Lose 310,000 Jobs in 2014 If Unemployment Insurance Extensions Expire", *Economic Policy Institute Report*, EPI Issue Brief #371, November 7, 2013

overall impact of unemployment insurance program is much broader than it may appear at first.

Even though it is obvious that benefits programs will increase the consumption, extent of this impact is conditioned by benefits level, duration and many other nuances. According to the study by J. Gruber, a 10% increase in the level of unemployment benefits reduces the decrease in consumption level among jobless workers by around 2.7%. It also demonstrates that a 22% drop in consumption level is observed among unemployed workers that are not unemployment benefits recipients. Overall, replacement rates around 60% or higher demonstrated the positive impact on consumption among unemployed workers since such level of payments enabled workers to maintain most of the consumption before unemployment spell.

Effects of Benefit Level and Duration

The majority of studies has shown that the overall effect of unemployment benefits programs depends on the level and duration of payments. Typically, studies prove that relatively higher levels of unemployment benefits are most likely to increase the duration of the unemployment spell. For example, one study for Austria found that the increase of unemployment benefits by 4.6% leads to the increase of duration of unemployment spell by approximately half a week. Another study, also for Austria, showed that unemployment benefits demotivated workers, decreasing the country's job-finding rates among unemployed by 5-9%.

These are spillover effects of unemployment benefits. Typically, these occur mostly for unemployed workers who involuntarily lost their jobs. The unemployed population that is not eligible for unemployment insurance payments typically do not experience these spillover effects. The fact that these occur only for unemployment benefits recipients makes the spillover effect on the national unemployment less severe: the position that is turned down by the eligible for unemployment benefits worker will most likely be filled by another

unemployed job seeker who is not eligible for UI. Thus, spillover effect on the unemployment rate is mitigated by strict eligibility requirements for unemployment payments recipients.

Another question that arises is whether the effects of benefits on unemployment depends on the economic downturns. It might be the case that during economic downturn due to the limited amount of available job positions the worker will turn down the low-skilled vacancy waiting for better position since being secured by the unemployment benefits. On the other hand, due to the scarcity of job vacancies, worker might be more motivated to offer lower paid position exiting unemployment spell earlier since there is no many positions anyways. For example, in Germany the effect of unemployment benefits is more negative during the normal economic time than during the economic downturns.

Overall, as noted, the effects of the duration and level of benefits can differ significantly across countries. Thus, policies that regulate the level and duration of payments need to strike a balance between spillover effects and positive effects. One way it can be achieved is by setting the level and duration not at excessive and generous, but at adequate level.

Effect of Job Search Requirements

One of the main requirements for eligibility for benefits is an active job-search. However, this requirement can vary across countries from simply being registered with the local unemployment agency to a required amount of visits per month to providing the evidence of contacting employers. Studies on the effect of job-search requirements on the duration of the unemployment spell have shown that strengthened requirements on the job search result in the decrease of unemployment spell as well as higher chances that the worker will find the job. For example, a study on the US unemployment situation found that workers that had no fixed requirements on the job search experienced on average 3 weeks longer unemployment spell than their peers that had strengthened search requirements. In addition, another study on the US unemployment found that people that were required to contact more

employers to be eligible for benefits were unemployed around 6% less time than those who were required to contact the smaller number of employers. Overall, we observe the positive effect of strengthened job search requirements on unemployment.

II. III. Conclusion

Overall, it is evident that unemployment benefits have a much broader effect on the economy than it might appear. Since enabling unemployed population to maintain their pre-unemployment consumption level mostly or partly, it lowers the risk of falling into poverty, sustains the decent level of economic growth during the economic downturns and prevents the risk of debts. On the other hand, benefits also have side effects such as decreased motivation to find a new job if the level of payments is too generous that result in increased duration of unemployment spell. Thus, it is critical for government to set the level, duration and eligibility criteria in a way that will maximize the positive effect of benefits while minimizing side effects. Overall, it is challenge to policy makers to set the adequate unemployment benefits to strike the balance between the beneficial effects on the economy and unemployment and negative side effects.

Chapter III. Literature Review of Effect of Unemployment Insurance Payments in the US

In 2008, the US Congress implemented the Emergency Unemployment Compensation program that extended unemployment benefits payment from 26 weeks provided by the majority of states up to 73 weeks of benefits, and up to 99 weeks in some states where the unemployment rate was especially high. Expansion of unemployment insurance benefits was one of the policy responses to the Great Recession in 2008. The intention of this reform was to provide the unemployed with more time so they could find an adequate and well-suited job for them in order to increase the quality of job-placement and decrease unemployment.

There is a considerable amount of literature studying the consequences of the UI extension program. Many scholars have argued that unemployment insurance (UI) benefits have only worsened the unemployment situation in the country. For example, S.Fujita in the paper “Effects of Unemployment Insurance Benefits: Evidence from the Monthly CPS” using data from monthly

Current Population Survey by comparing the duration of unemployment of men who were unemployed during the period 2004-07 with the unemployment durations of men who were unemployed in 2009-2010 and found that “extended benefits in recent years have raised male workers’ unemployment rate by 1.2 percentage points with a 90% confidence interval of 0.8 to 1.8 points” (S.Fujita, 2011). Kuang and Valetta using the same data set estimated the effect of UI extension by comparing the durations of unemployment of those who are eligible for Unemployment Insurance benefits with the durations of those who are not eligible for UI. They found that “UI extensions account for 0.8 percentage points of the increase in the unemployment rate from its pre-recession levels in 2006 and 2007 through June of 2010” (Valetta and Kuang, 2010). According to some studies on the topic, the implementation of this response reform did not prove to have a positive impact on the unemployment situation in the United States in the late 2000-s – early 2010-s.

At the end of 2013, Congress decided to terminate the Emergency Unemployment Compensation Program. Thus, the duration of UI benefits in all states was lowered to their initial duration of 26 weeks. This decision was quite controversial. Some economists supported the decision arguing that the economy have improved since the period of Recession, so the unemployed find new jobs faster than before and they no longer need extra time for that. Others instead voiced a concern that “without access to benefits unemployed workers will stop searching for jobs and will exit the labor force instead” (M.Hagedorn, I.Manovskii, K.Mitman, p.3).

However, there is evidence that after the decision to eliminate unemployment insurance benefits’ extension, the situation on the U.S. labor market got significantly better. For example, data from the U.S. Bureau of Labor Statistics website suggests that in 2014 the average employment growth was around 25% higher than in 2013. In addition, economists Hagedorn, Manovskii and Mitman found that “the cut in unemployment benefit duration led to a 2% increase in aggregate employment, accounting for nearly all of the remarkable employment growth in the U.S. in 2014” (M.Hagedorn, I.Manovskii, K.Mitman, p. 4). In order to see if this positive change in the unemployment situation was indeed due to the expiration of the extended UI program, I am conducting research to examine whether the job search duration has decreased and workers started to regain employment faster after the expiration of the program than before when the program still was into effect. I use data from the Current Population Survey (CPS) from 2014 to 2015.

In the research⁵ on the effect of duration and level of unemployment benefits on the exit rate from unemployment spell conducted by Robert Moffitt tests the search model implication using an extensive data set for period between 1978 and 1983 across states. The

⁵ Moffitt, Robert. “Unemployment Insurance and the Distribution of Unemployment Spells,” Journal of Econometrics, 28 (1985), pp. 85-101.

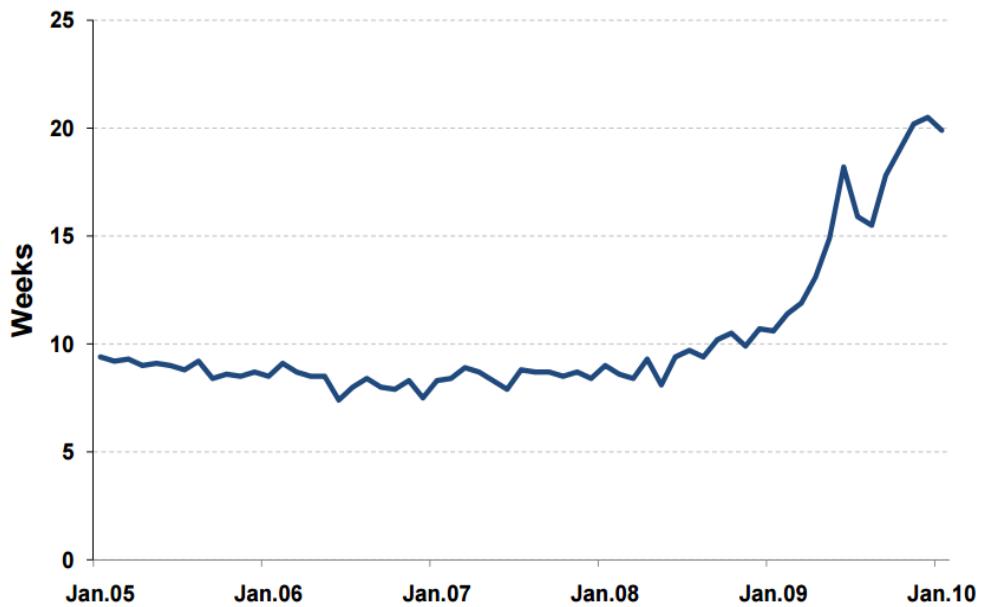
result of Moffitt's regression analysis shows that on average an increase of benefits of 1 week results in increase in the duration of unemployment of 1 day. Later on scholars Mayer and Katz used the same data set and concluded extended empirical analysis⁶ on this matter that resulted in evidence of similar effect of duration and level of benefits on the exit rate.

Since the earlier literature focuses more on the exit rate, later on the question what are rates of finding the job and completely dropping from the labor force that are associated with unemployment benefits raised. There are few papers that examine the effect of benefits on the rate of re-employment. For example, Bruce Fallick uses BLS Displaced Worker Survey data to conduct an analysis on the re-employment rates. Fallick uses a semiparametric model to estimate the hazard function for individuals to transition from being unemployed to being re-employed. The set up of the model seems to be significantly relevant to the real labor market as author takes into account the concept of competing. Fallick concludes that there is no significant evidence of the difference in re-employment rates before and after the expiration of the unemployment duration for workers if worker is re-employed in the same industry. However, unemployment insurance payments start to make the difference as soon as worker regains the employed status in new industry: in this case, unemployment benefits will decrease the rate of workers to become employed again after the unemployment spell.

Figure 2 represents the trend in duration of unemployment spell: the growth of average period of unemployment is evident. There is a significant amount of literature investigating the reasons behind the increase in the duration of unemployment.

⁶ Katz, Lawrence, and Bruce Meyer. "The Impact of the Potential Duration of Unemployment Benefits on the Duration of Unemployment," Journal of Public Economics, 41 (1990), pp. 45-72

Figure 2 Median Duration of Unemployment



Source: Fujita, Shigeru, Economic Effects of the Unemployment Insurance Benefit, (July 30, 2010)

Scholar Robert Moffitt was a pioneer in studying the effect of UI benefits on the duration of unemployment. He was one of the first scholars to state the hypothesis that moral hazard is indeed a serious issue of the UI benefits. In his study, Moffitt test the hypothesis that higher levels of UI lead to the increased duration of unemployment. Moffitt used the UI offices data on the period from 1978 to 1983. This period of US labor market history represents a particular interest of the topic: Federal Supplementary Compensation program was introduced by Congress in 1982 and by combining with a regular UI program prolonged the duration of UI benefits up to 60 weeks. By implementing a regression model Moffitt examines the change in unemployment exit rate right before the exhaustion of UI benefits across unemployed individuals in different states controlling for the state difference. This study's main finding is

that there is an evidence of spike in exit rate right before UI expire: "... a one-week extension of benefits leads to an increase in the duration of unemployment of 0.15 week"⁷.

Scholars Meyer and Katz extended the Moffitt's work and demonstrated the effect of moral hazard story by finding evidence of the increase in re-employment rate associated with the benefits exhaustion. Authors used CWBH data set, that is Continuous Wage and Benefit History data set that provides a very detailed information on displaced workers' levels of unemployment benefits as well as the duration of unemployment spells for these workers. Scholars estimate hazard model to determine the relationship between level and length of unemployment benefits payments and the duration of unemployment. Results of this estimations suggest that there is a strong correlation between the potential length of unemployment payments and the duration of unemployment spell. Quantitative analysis allowed Meyer and Katz to conclude that highest rates of escape from unemployment and new job findings are associated with the end of exhaustion of unemployment benefits payments and the end of unemployment insurance program. Besides, results indicate that additional week of unemployment insurance payments increases the duration of unemployment spell by about .2 weeks. Therefore, this paper suggests that the duration of unemployment payments have a behavioral effect on the workers escape from unemployment.

As earlier studies focus on the effect of UI payments on the rate of exit from unemployment, it is not necessarily true that exiting the unemployment means that unemployed worker found a new job. David Card, Andrea Weber and Raj Chetty in their paper examine the effect of unemployment benefits on the new job-finding rate in Austria. Authors argue that Austria's UI benefits systems is similar to the US's one, thus this study represents some value for my study. The data set that author use is quite rich: so that authors have the information whether the exit of worker from unemployment means a finding a new

⁷ Fujita, Shigeru, Economic Effects of the Unemployment Insurance Benefit, (July 30,2010)

job or not. Findings of their research are quite interesting: Card, Chetty and Weber find that even though there is indeed a spike in the exit rate at the time right before the UI payments exhaustion, this spike has almost nothing to do with the re-employment. Authors conclude that there is a little evidence of unemployment exit due to finding a new job.

Jonathan Gruber and Raj Chetty in their study make a hypothesis that the reason of positive relationship between UI benefits and unemployment duration is the liquidity effect. Chetty and Gruber use the data from SIPP, Survey of Income and Program Participation, to detect any liquidity effect on the duration of unemployment. Scholars find that more than a half of increase in unemployment duration from higher and longer unemployment benefits can be accounted to the liquidity effect.

Later researches on the re-employment rates attempted to explain the drop off of long-unemployed workers after the exhaustion of unemployment benefits. One of the most often faced challenges is employer's discrimination: scholars Rand Ghayad and William Dickens in their research⁸ showed that employers would be least likely to offer job to someone who has been unemployed for more than 6 months. They explain it by the common assumption among employers that longer unemployment indicates some problems of employee. Facing realities of contemporary labor market, chances are not that high that long-term unemployed will exit unemployment spell once the program has expired.

After reviewing some literature on the economic effects of UI program, it can be concluded that there is some evidence on the effect of UI on the unemployment duration and unemployment rate. Some studies show the evidence of the positive relationship between higher UI benefits and the duration of unemployment spell while other studies focus more on global effect of UI on the economy and show that UI has also some positive effects on economy such as economic growth.

⁸ Ghayad, Rand and Dickens, William T., What Can We Learn by Disaggregating the Unemployment-Vacancy Relationship? (October 1, 2012). FRB of Boston Public Policy Brief No. 12-3. Available at SSRN:<http://ssrn.com/abstract=2285075> or <http://dx.doi.org/10.2139/ssrn.2285075>

One of the main limitations of studied literature is the lack of the research of the effect for different parts of the population. It is clear that workers with different skills, background and employment history will be affected differently. Therefore, in my research I focus more on how differently increase in the level and duration of unemployment benefits will be affecting different parts of the population.

Chapter IV. Model of Unemployment Insurance Payments: US Case

As the theory suggests, the increase in level and duration of unemployment benefits leads to a longer duration of the unemployment spell for workers due to reasons such as moral hazard effect, low wage level, employer's preference not to hire workers that have been unemployed for too long and etc. Based on the theoretic point of view on unemployment benefits, it can be assumed that decision not to prolong extended benefits program was based on the assumption that cutting the length of unemployment benefits will make unemployed workers get back to work faster. However, this is only an assumption. Would it be the case in a real world economy? Did decreased duration of unemployment benefits resulted in shorter period of unemployment spell? Did such a decision motivate workers to get out of unemployment faster? In the empirical part of this thesis work I use the data from Current Population Survey conducted by Census Bureau and the U.S. Bureau of Labor Statistics to test the hypothesis that a decreased length of unemployment benefits will result in a shorter duration of unemployment.

Examining the real effect of the duration of unemployment benefits on the duration of unemployment spell will enable me to understand whether the decision by US government to increase the duration of unemployment payments in 2008 was a rash decision that resulted in no incentive for workers to take new jobs when those are available. Would it be the case that instead of motivating unemployed workers to take jobs and exit unemployment faster this reform enabled unemployed population take easy way out of pay without any work and resulted in longer duration of unemployment? Answering these questions will enable me to fully understand what reasons explain the differences between Germany and US recent labor market reforms experiences.

To test this theory and answer my research questions I use difference-in-difference statistical modeling to identify the real effect of the policy change on the duration of unemployment for workers that are eligible for unemployment benefits payments.

IV. I. Data

I use the data from 2 consecutive years (2014-2015) of the CPS, which is the U.S. Government's monthly survey of unemployment and labor force participation (CPS Design and Methodology Technical Paper 66, p.3). The CPS provides statistics for the population of the United States and includes a variety of information on a wide range of issues that are related to employment and income. Current Population Survey is conducted by the Census Bureau and the U.S. Bureau of Labor Statistics. The data is collected using a randomly selected sample of 60,000 households. Households from all 50 states participate in the survey. The sampling scheme “4-8-4” is used for CPS data collection: “Households … are in the survey for 4 consecutive months, out for 8, and then return for another 4 months before leaving the sample permanently” (CPS Data and Methodology Technical Paper 66, p. 11). The questionnaire is used in order to collect data. The following criteria are used for eligibility of respondents: they should be 16 years old or older and should not be in institutions such as hospitals, prisons or nursing homes. CPS collects detailed information not only “on employment, hours, and earnings for several hundred industries” but also on displacement of workers, income or job tenure.

IV. II. Sample Selection and Variable Definition

I restrict my sample to the US residents aged 18 to 64 to exclude those who are not able to work and those individuals who are eligible for social security benefits. I also restrict my sample to the currently (at the time of the survey) employed population, who have regained employment again after being unemployed. Including those who are currently unemployed would not help us estimate the duration of their unemployment spell as we do not have information on when they become re-employed again. I also exclude new entrants into the labor force (e.g. students who just have just started to work) as they have not yet been displaced so we can not predict for them the duration of their unemployment spell.

Since the CPS does not have any information about whether or not an individual was eligible for UI, I will infer eligibility for UI from the income from unemployment following the logic that if individual's income from unemployment was 0, this worker was not eligible for UI benefits. Those individuals, whose income from unemployment was bigger than 0, would be listed as "Not Eligible for UI benefits". Re-entrants, new entrants and those who left jobs voluntarily will be also excluded from my sample.

Initially I was planning on measuring an impact of the expiration of the reform on both 2014 and 2015 since it has expired in December of 2013. However the data for 2015 has not been collected yet (as individuals report on the previous year), so I will use year 2014 only as my "after reform" year.

I will also restrict my sample to American citizens, excluding immigrants, green card holders and work authorized workers as very often the procedure for them to become eligible for unemployment benefit payments is either different or they are not eligible for the unemployment insurance benefits at all.

Since the categorical variable for the respondent's race/ethnicity in the CPS data is highly detailed, in order to avoid small cell sizes, I recode it into 7 broad categories: "White", "Black", "Native American", "Asian", "Multiracial", "Naturalized", "Foreign National" and "Hispanic Origin". Educational attainment is also recoded into 3 broad categories: "High School and lower", "Some College" and "Bachelor's Degree and higher". Sex was recoded into dummy variable "Female" that takes value 1 when individual is female and value (0), when individual is male.

Finally, I code marital status into a dummy variable that takes value (0) if individual is "Not Married" and (1) if "Married".

The outcome variable of interest in this study is the number of weeks that the respondent "looked for work or was on layoff during the preceding calendar year" (CPS, design and methodology, Technical Paper 66), responses of the year 2015 will contain the answer for 2014 while responses for 2014 will contain answers for the year 2013. Therefore, we will compare only year 2015 with year 2014 as in our responses it will be comparing weeks being unemployed during 2014 (after the program has expired) versus weeks being unemployed during 2013 (before the program expired).

I also collected data on income from unemployment ("incunemp") that is the amount of money that people were receiving from unemployment benefits. Based on the information that this variable contains I have generated a new dummy variable "UB" for eligibility for unemployment insurance benefits. This variable takes value (0) if person was not eligible for benefits (i.e. his income from unemployment was 0, "incunemp"=0) and value (1) if person was eligible for unemployment benefits (i.e. individual's income from unemployment was more than 0).

Another generated dummy variable is "UI", a variable for before and after expiration of the program. "UI" takes value (0), when the year of individual's response is before the

expiration of the program (in our case it is the year 2014), and value (1) when the year of the individual's response was collected is after the expiration of the Emergency Unemployment Insurance program, in 2015.

Finally, last explanatory variable is State Unemployment rate, which represents average unemployment rate in the state that individual works in.

IV. III. Descriptive Statistics

Table 1 presents descriptive statistics on the average amount of weeks being unemployed for the previous year. Several results in this table are worth highlighting. For example, it seems reasonable that individuals with higher educational attainment (Bachelor's Degree or higher) on average would have shorter unemployment spells duration, compared to those who have less than a bachelor's degree. In my sample, bachelor degree or higher holders' duration of unemployment averages around 4 weeks less than individuals' with educational attainment of High School or lower. For individuals with Some College educational attainment, they tend to be unemployed on average 2 weeks longer than those with Bachelor Degree or higher and 2 weeks shorter than those workers who finished High School or has lower educational attainment. Married respondents, on average, spend about 3 less weeks being unemployed compared to their non-married peers. Women tend to spend, on average, spend less time in the unemployed group than their Native American, Black, Multicultural, Naturalized and Hispanic Origin peers. Black and Multiracial respondents showed on average longest duration of an unemployment spell (their unemployment spell on average was 3-4 weeks longer than for other groups).

After the expiration of the Emergency Unemployment Compensation program, the average duration of unemployment spells appears to have decreased by about a week. Respondents that were eligible for the unemployment benefits spend on average 9 more weeks being unemployed than those workers that were not eligible for the unemployment insurance benefit payments.

As for the relationship between the duration of unemployment spell and unemployment rate in states (Appendix 1), the results of collecting means for different unemployment rates show that unemployment rate and duration of unemployment spell have

a positive relationship: with an increase in unemployment rate, the average of the duration of unemployment spell also seems to rise.

| Table 1 Descriptive Statistics CPS 2014-2015 | | |
|---|--|--------------------|
| Response: Unemployment Duration | Average duration of unemployment spell, in weeks | Standard Deviation |
| By Educational Attainment | | |
| High School or Less | 9.71 | .2273246 |
| Some College | 7.05 | .1762251 |
| Bachelor's Degree or Higher | 5.45 | .205749 |
| By Marital Status | | |
| Not married | 8.48 | .156955 |
| Married | 5.87 | .1353911 |
| By Sex | | |
| Male | 8.74 | .1691203 |
| Female | 5.98 | .1271918 |
| By Race | | |
| White | 6.01 | .0835593 |
| Black | 10.39 | .2858876 |
| Native American | 10.28 | .7138759 |
| Asian | 5.34 | .4703754 |
| Multiracial | 10.91 | 1.465135 |
| Naturalized | 6.28 | .3551152 |
| Hispanic Origin | 8.52 | .2125831 |
| By the Time Period | | |
| Before Expiration | 7.581289 | .1454631 |
| After Expiration | 6.580907 | .1194395 |
| By Unemployment Insurance Benefits Eligibility Status | | |
| Not Eligible | 6.183649 | .1062473 |
| Eligible | 16.01616 | .3311731 |

IV. IV. Empirical Strategy

I investigate the impact of the expiration of extended Unemployment Insurance benefits on the duration of the unemployment spell of the workers by comparing the amount of time that it takes workers to get back to the labor force after being displaced before the expiration of the program and after. As long as some economic shocks affected both benefits-eligible and noneligible groups similarly, this empirical strategy allows me to differentiate the effect of expiration of the program from other changes in the economy at that time. For the extent that expiration of the UI benefits system somehow influenced the duration of the job search and return to the labor force of those who were not eligible for the UI, my estimates provide the comparison before and after for those as well. I will use difference-in-difference empirical approach. The advantage of using a difference-in-difference approach is that it allows me to identify the effect of expiration of Emergency Unemployment Compensation Program on the outcome variable (that is the duration of unemployment spell for worker) by comparing the change in the duration of unemployment spell for unemployed part of population that was affected by the change (those workers who were eligible for unemployment compensation payments), compared to the “control” group, that is the part of population that was not affected by the change. Besides, difference-in-difference approach will also allow me to control for extraneous factors that might have some effect on the outcome variable.

Let UD be the average amount of weeks to be in an unemployment spell before returning back to the labor force, let UI take value 0 if the year is 2013 (before expiration of the program) and value 1 if it is 2014 (post expiration of reform), and let UB indicate whether the worker is eligible for the UI benefits (UB will take value 1) or not eligible (UB will take value 0). First, consider the regression on the duration of the unemployment spell before

returning back to the labor force on the eligibility for UI dummy, the post-expiration dummy, state unemployment rate, age, education attained, race/ethnicity status, marital status and gender status of the unemployed worker:

$$UD = B_0 + B_1(UI) + B_2(UB) + B_3(Age) + B_4(Education) + B_5(REC) \\ + B_6(Unempr) + B_7(Female) + B_8(Married) + u$$

,where *Age* is age of worker; *Education* is ordinal variable for education attained; *REC* – variable of race/ethnicity and citizenship/migration status; *Married* – dummy variable for marital Status, takes value 0 if individual is not married and 1 if married; *Female* is a dummy variable for gender, which takes value 1 for females and value 0 for males; *Education* – variable of education attained by a worker; *Unempr* is the level of unemployment rate in the worker's state.

Now consider the regression of the average amount of weeks to be in an unemployment spell before returning back to the labor force on the eligibility for UI dummy, the post-expiration dummy and their interaction:

$$UD = B_0 + B_1(UI) + B_2(UB) + B_3(UI * UB) + B_4(Age) + B_5(Education) + B_6(REC) \\ + B_7(Unempr) + B_8(Female) + B_9(Married) + u$$

,where *Age* is age of worker; *Education* is ordinal variable for education attained; *REC* – variable of race/ethnicity and citizenship/migration status; *Married* – dummy variable for marital Status, takes value 0 if individual is not married and 1 if married; *Female* is a dummy variable for gender, which takes value 1 for females and value 0 for males; *Education* – variable of education attained by a worker; *Unempr* is the level of unemployment rate in the worker's state.

I also do increase the number of controls by including a constant, then linear interaction between age and each of the education dummies, interaction between each Race and Ethnicity group and the Unemployment Rate in State dummy, interaction between Education and Race and Ethnicity. By this measure I attempt to control for as many variables as my model allows me to. Besides, controlling for these variables will decrease the standard error for my difference-in-difference variable, which will enable me to calculate the effect of the expiration of the Emergency Unemployment Compensation program on the duration of unemployment spell more precisely.

The duration of unemployment spell equation was estimated using a sample of 398,580 workers from CPS for 2014 and 2015.

IV. V. Results

Table 2 presents results of regression on the duration of unemployment spell and predicting variables such as age, sex, education, race/ethnicity, eligibility for unemployment benefits, expiration of the program and state unemployment rate. This model does not include the difference-in-difference variable (interaction term between eligibility for unemployment payments and expiration of the Emergency Unemployment Compensation program) so one can observe the independent effect of main predicting variables on the duration of unemployment spell. When running the regression on depending variable and all predicting variables without interaction terms, all predicting variables turn out to be statistically significant, suggesting that all predicting variables have effect on the independent variable, that is duration of unemployment spell. The results of regression presented in Table 3 suggest the following. After the expiration of the program the average duration of unemployment decreased by 0.84 of a week. Receivers of unemployment benefits tend to have 9.4 weeks longer unemployment period than their peers that are not eligible for unemployment payments. Females tend to exit unemployment faster than male workers by 1.49 of a week. An increase in state unemployment rate by 1% seems to increase the duration of unemployment of workers by 0.26 of a week. As for the education, individuals with higher degree of education tend to have shorter period of unemployment. As for the race/ethnicity/origin effect on the unemployment, workers of black and multicultural race tend to be unemployed for a longer period of time than other unemployed individuals. This table reports results of independent effect of each predicting variable on the unemployment duration and it can be concluded that all of predicting variables separately do affect the unemployment duration.

Table 3 reports results of my difference-in-difference estimation predicting duration of unemployment spell regression, controlling for age, marital status, education attainment,

state, race and gender. I confirm findings in the literature that the duration of the unemployment spell for the worker who is eligible for unemployment benefits is higher than for these workers that are not eligible for it: a UI-eligible worker will spend around 9.62 weeks more being unemployed than the worker that is not eligible. Also, after the expiration of the program workers decreased the duration of unemployment spell on average by .68 of week. The coefficient on the interaction term that shows the effect of the policy change is significant at .1 level of significance and equals -1.18 which suggests that after the expiration of the program those workers, who received unemployment benefits, decreased average duration of the unemployment spell by about 1.25 week. This finding implies that the policy change was effective.

Figure 2 shows the effect of the expiration of the program for both eligible and non-eligible for UI workers and we can see that for both groups the average time that workers spend in attempts to re-enter the labor force again has decreased. Even though the effect for those workers who were eligible for UIB payments seems to be more significant than for those who are not eligible, both groups were affected by the expiration of the program.

Females showed to regain employment faster than their male peers: their duration of unemployment spell on average is about 1.5 weeks shorter than males' duration of unemployment.

Before I included an interaction term between Race/Ethnicity/Origin and State Unemployment Rate, results of my regression showed that workers spend on average about 3 weeks more being unemployed than white workers. However, after including an interaction term to the model, the coefficient on Black showed to be not significantly different from 0. As for the correlation between race and unemployment rate, the coefficient on interaction between State

Unemployment Rate and Black turned out to be significantly different from 0 and of value .58. That suggests that the effect of the State Unemployment Rate for Blacks on the duration of unemployment spell is different than for white workers. On average, an increase in unemployment rate by 1 point would increase the duration of unemployment spell for blacks by about .58 of weeks more than for white workers. That implies that Black Population density is correlated with the state unemployment rate.

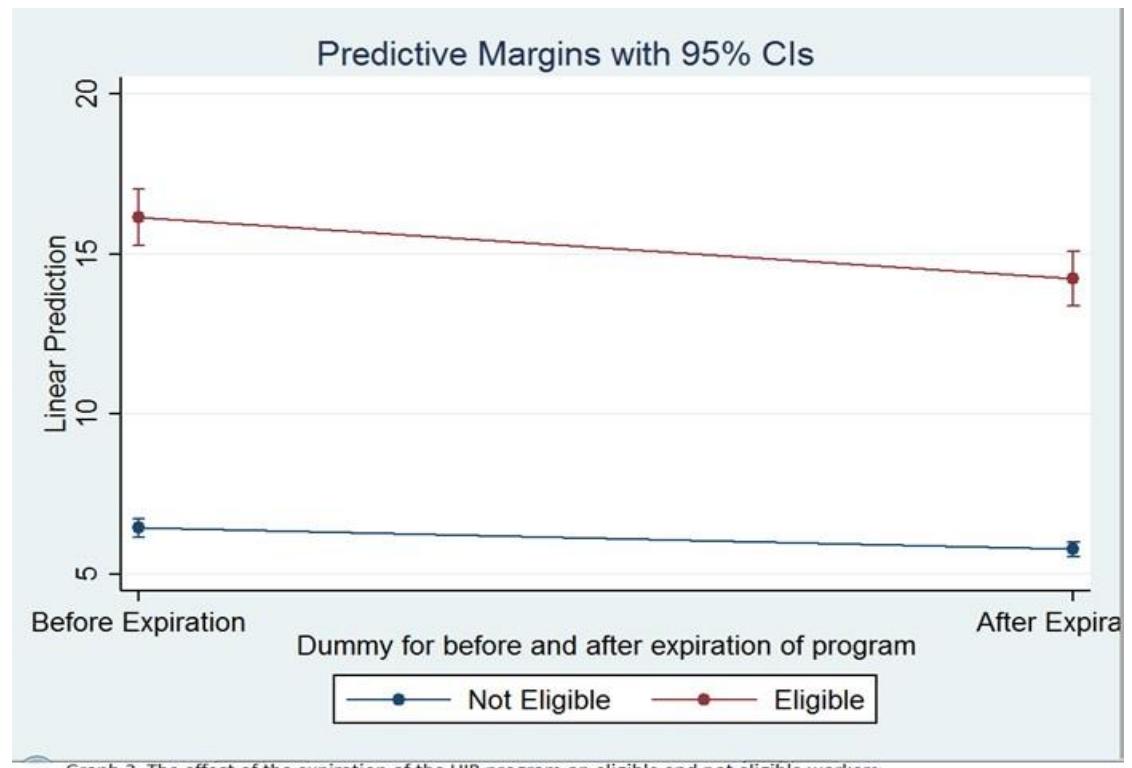
Married workers also tend to exit unemployed group: their duration of unemployment spell on average is by about 2.35 weeks shorter than of those who are not married.

As for the effect of educational attainment on the duration of unemployment spell, workers with educational attainment of Some College tend to spend around 8 weeks less being unemployed than their peers with High School Diploma or lower educational attainment.

Age also showed to have a significant linear relation with the duration of unemployment. With every additional year workers tend to be unemployed by .27 weeks longer. There is also some correlation between educational attainment and age: for workers who have an educational attainment of Some College with every additional year the duration of unemployment spell will be around .23 of week longer than for their peers with educational attainment of High School or lower.

Finally, the effect of Bachelor Degree on the duration of unemployment spell is different for black workers. For them, having an educational attainment of Bachelor Degree or higher means about 2.65 weeks shorter unemployment spell than for their white peers with the same educational attainment.

Figure 3. The Effect of the Expiration of EUB Program on Eligible for Receiving UI and Non-eligible Workers.



**Table 2. The Results of Difference-in-Difference Estimation. No
Interaction Terms Model.**

| Dependent variable: time spent in the unemployment spell, (weeks) | | |
|--|--------------|---------|
| Independent value | Coefficients | P> t |
| State Unemployment Rate | .26*** | 0.001 |
| Female | -1.49*** | <0.0001 |
| Race/Ethnicity/Citizenship/Origin (1) | | |
| Black | 3.35*** | <0.0001 |
| Native American | 2.77** | 0.031 |
| Asian | -1.19** | 0.022 |
| Multiracial | 4.22** | 0.017 |
| Naturalized | 1.4** | 0.006 |
| Hispanic Origin | 0.98* | 0.097 |
| Married | -2.14*** | <0.0001 |
| Educational Attainment (2) | | |
| Some College | -2.16*** | <0.0001 |
| Bachelor's Degree or Higher | -3.35*** | <0.0001 |
| Age | -.036*** | <0.0001 |
| UB | | |
| Eligible | 9.4*** | <0.0001 |
| UI | | |
| After Expiration | -.84*** | <0.0001 |
| Constant | 9.15*** | <0.0001 |
| R-squared= 0.1175, F(15,398304) = 103.65, Prob>F <0.00001, N = 398,319 | | |
| *significant at 10%; **significant at 5%; ***significant at 1% | | |
| (1) The base group consists of White workers. (2) The base group consists of individuals with an educational attainment of High School Diploma or lower. | | |

Table 3. The Results of Difference-in-Difference Estimation.

| Dependent variable: time spent in the unemployment spell, (weeks) | | |
|---|--------------|---------|
| Independent value | Coefficients | P> t |
| State Unemployment Rate | .21*** | 0.009 |
| Female | -1.49*** | <0.0001 |
| Race/Ethnicity/Citizenship/Origin (1) | | |
| Black | -.33 | 0.902 |
| Native American | -.27 | 0.941 |
| Asian | -.388 | 0.124 |
| Multiracial | -3.82 | 0.573 |
| Naturalized | -3.23 | 0.297 |
| Hispanic Origin | -1.05 | 0.572 |
| Married | -2.35*** | <0.0001 |
| Educational Attainment (2) | | |
| Some College | -7.97*** | <0.0001 |
| Bachelor's Degree or Higher | -2.89 | 0.229 |
| Age | .27** | 0.003 |
| Age ² | -.004*** | <0.0001 |
| UB | | |
| Eligible | 9.62*** | <0.0001 |
| UI | | |
| After Expiration | -.68*** | <0.0001 |
| UB*UI | | |
| Eligible*After Expiration | -1.18* | 0.068 |
| Education*Age | | |

| | | |
|--|---------|-------|
| Some College*Age | .23** | 0.047 |
| Bachelor Degree or Higher *Age | -.099 | 0.429 |
| Education*Race/Ethnicity/Origin | | |
| Some College*Black | -.14 | 0.878 |
| Some College*Native American | -1.85 | 0.451 |
| Some College*Asian | 1.18 | 0.445 |
| Some College*Multiracial | -1.23 | 0.814 |
| Some College*Naturalized | .35 | 0.814 |
| Some College*Hispanic Origin | .71 | 0.339 |
| Bachelor Degree or Higher*Black | -2.65** | 0.003 |
| Bachelor Degree or Higher*Native American | -3.76 | 0.166 |
| Bachelor Degree or Higher*Asian | 1.3 | 0.349 |
| Bachelor Degree or Higher*Multiracial | -.64 | 0.897 |
| Bachelor Degree or Higher*Naturalized | -.33 | 0.787 |
| Bachelor Degree or Higher*Hispanic Origin | .22 | 0.795 |
| Race/Ethnicity/Origin*Unemployment Rate | | |
| Black | .58* | 0.093 |
| Native American | .66 | 0.245 |
| Asian | .22 | 0.462 |
| Multiracial | 1.43 | 0.145 |
| Naturalized | .61 | 0.127 |
| Hispanic Origin | .29 | 0.232 |
| Constant | 4.72*** | 0.004 |
| R-squared= 0.1189, F(27,398179) = 68.26, Prob>F <0.00001, N =398,319 | | |
| *significant at 10%; **significant at 5%; ***significant at 1% | | |
| (1) The base group consists of White workers. (2) The base group consists of individuals with an educational attainment of High School Diploma or lower. | | |

IV. VI. Conclusion

In this paper, I measure the effect of the expiration of Emergency Unemployment Compensation program in the end of 2013 on the unemployment. By using the data from the Current Population Survey for the period 2014-2015 I estimate the effect of the decision of the U.S. Congress in the end of 2013 to stop Unemployment Insurance benefit extensions on the duration of the unemployment spell. Some earlier studies suggested that after the expiration of the program, as total duration of the benefit payments fell from 53 to 26 weeks, the duration of unemployment spell has also decreased.

A simple descriptive analysis of the sample of my data shows that after the program has expired, the average duration of unemployment spell for all workers (for those who received UI benefits and for those who have not) decreased by about a week. Besides, respondents that were receiving Unemployment Insurance benefits show to spend on average 9 more weeks being unemployed than those workers that were not eligible for the unemployment insurance benefit payments. The descriptive analysis also shows that after the program has expired, workers on average shortened their unemployment spell by around a week. These findings imply some positive effect of the decision to stop extended Unemployment Insurance payments.

My econometric analysis of the effect of policy change on the unemployment spell using the difference-in-difference approach confirms the positive effect of the expiration of the program on the unemployment. I find that after the duration of Unemployment Insurance benefits were decreased back to 26 weeks, the average duration of unemployment spell decreased by .68 weeks. Those workers who receives UI benefits indeed have on average around 9 weeks longer duration of unemployment than their peers who do not receive unemployment benefits. Finally, I find that for both groups of workers who receive UI

benefits and do not receive, the expiration of the program has a positive impact on their unemployment by decreasing the duration of unemployment spell for both of these groups of workers.

My findings confirm the theory that increased duration of unemployment benefits result in longer duration of unemployment. This is a great example of the case when too generous unemployment benefits not increase the incentive of workers to take the job when those are available, but enable workers to take easy way out without putting any effort in the job search.

Duration and generosity of unemployment benefits is one of the main reasons that explain difference between two countries' labor market reform experience. While in Germany the level of amount and duration of benefits motivates unemployed workers to take jobs when they have the chance, in US it decreases workers motivation to exit unemployment and sustains such a comfortable level of life that workers tend to exit the unemployment once they completely exhaust their unemployment benefits. Therefore, one of the main reasons of such a great differences in result of reforms is the duration of unemployment benefits.

Chapter V. Literature Review of Unemployment Insurance Payments: Germany Case

V.I. Background

Prior to Hartz reforms, the German unemployment and wage system was one of the most generous in the world. Unemployment benefits were 67% of the last net income for those with children and around 60% for those without. Unemployment benefits were paid from 6 to 32 months after the person joined the unemployed population. The maximum level of unemployment benefits prior to the Hartz reforms could reach 4200 EUR per month. Unemployment benefits after the end of its duration were followed by so-called unemployment assistance, which reached 57% of the last income for those unemployed with children and 53% for unemployed without. This assistance to unemployed was unlimited in time. Such a policy made Germany not only a country with one of the most generous welfare systems but also a country with one of the highest replacement rates as well as highest unemployment rate throughout the Eurocrisis period.

The main goal of the Hartz commission was to issue and implement labor market policies that would motivate unemployed workers to regain employment again. Therefore, mechanisms of all reforms were aimed to do so. The Hartz I-III reforms were aimed to improve the efficiency of the job search and increase the flexibility of employment. Those first stages of Hartz reforms included the regulation of the federal labor agencies in order to improve the efficiency and the effectiveness of job search and make the process of connecting workers with job vacancies faster and more effective. The final Hartz reforms, Hartz IV, reduced the duration and size of the Unemployment Insurance benefits and made the eligibility for reforms more exclusive. Table 4 contains a short summary of every stage of Hartz reforms in Germany.

Table 4. Brief Description of Hartz Reforms in Germany

| Law | Adoption of law | Effective date | Measures |
|-----------|-----------------|----------------------------------|---|
| Hartz I | Dec 1, 2002 | Jan 1, 2003 | Setting up of new Personnel Service Agencies Support for further vocational education from the German Federal Labor Agency Deregulation of temporary work sector |
| Hartz II | Dec 1, 2002 | Jan 1, 2003 and April 1, 2003 | Introduction of subsidy for one-person companies (Me-inc); Introduction of low paid jobs (mini and midi-jobs) exempt from most social security taxes Threshold size for firms subject to layoff rules raised from five to ten workers |
| Hartz III | Dec 1, 2003 | Jan 1, 2004 | Restructuring of the Federal Labor Office |
| Hartz IV | Dec 1, 2003 | Jan 1, 2005 | Shortening of the duration of unemployment benefits. Merging of unemployment assistance and social assistance, with benefit set at the lower level of social benefits (unemployment benefit II); A new definition of acceptable jobs with sanctions for refusal of an acceptable job. |

Sources: Eichhorst and Marx (2011), Dlugosz and Wilke (2013).

Source: Engbom, Detragiache and Raei (2015)

As my main interest is the Unemployment Insurance benefits, I plan to narrow my focus on Hartz reforms to the Hartz IV set of reforms, as it's main focus was the regulation of UI. According to issued reforms, workers eligible for Hartz IV are those who lost their job and received their unemployment benefits that depend on their previous earnings and employment period. Usually those unemployment benefits last from 6 months to 2 years. Once the regular unemployment benefits period is over, the worker enters the Hartz IV program. Students who just graduated and never have been employed also automatically enter the Hartz IV program. Those who became eligible for Hartz IV received around 374 EUR per month (for a single person) and after 2013 it was raised to 391 EUR per month for living expenses. It might seem that this unemployment benefits level is hardly enough to pay just for rent, but Hartz IV recipients' medical insurance and rent are paid directly by the state. In order to give unemployed workers the incentive to quicker job-finding, it was decided by

Hartz commission that if a “Hartz IV” receiver turns down a job offer, he or she will lose the part of unemployment benefits. In some cases worker that turned down a job offer for more than once will lose all of unemployment benefits. Benefits level for families with children was set higher.

Hartz IV also motivated low-skilled workers working rather than staying on unemployment benefits: if a Hartz IV recipient takes a so-called “Ein Euro Job”, that is a low-skilled job that pays one euro per hour, the worker is allowed to keep all earnings without loosing or giving up unemployment benefits.

Overall, Hartz IV program was designed in a way that limited unemployment benefits to “subsistence level of living”⁹. The only way for worker to raise the level of living is to exit the unemployment and work. Thus, the German approach of targeting unemployment is to provide such conditions for unemployed population that will increase their incentive to take a job.

⁹ Gregory, Paul Roderick. «Why Obama Cannot Match Germany’s Jobs Miracle”. Forbes, 5 May 2013, <http://www.forbes.com/forbes/welcome/?toURL=http://www.forbes.com/sites/paulroderickgregory/2013/05/05/why-obama-cannot-match-germanys-jobs-miracle/&refURL=&referrer=>

V.II.Literature Review

There is a significant amount of the relevant literature that studies the effect of the Hartz reforms that I believe might help me with my further hypothesis testing and model building.

For example, Krebs and Scheffel (2013) and Launov and Waelde (2013) conducted macroeconomic analysis to evaluate the effect of the reforms. Both studies show that one of the main mechanisms of Hartz reforms, cuts in unemployment benefits, significantly reduced the unemployment rate in Germany.

Economists Tom Krebs and Martin Scheffel in their abstract test the theory of whether the significant improvement of unemployment situation could be attributed to the all Hartz reforms in general and especially to the latest one “Hartz IV” which believed to be the most effective one.

After stating the hypothesis that mainly Hartz IV, the main idea of which was the decrease of unemployment benefits, is attributed to the reduction of unemployment rate and what might have caused this, Krebs and Scheffel developed a calibrated macroeconomic model and using data from OECD on German unemployment, GDP and output growth conducted quantitative analysis. In order to find how the reforms affected aggregate macroeconomic variables in general and the unemployment rate in particular researchers combined in their study the incomplete-market model with the model of search unemployment.

The results of their quantitative analysis have shown a significant reduction of 14% in the German equilibrium unemployment rate following the Hartz reforms. Krebs and Scheffel have also estimated that the main force that lies behind the reduction of unemployment is a significant increase in job-finding rates, which is caused by an increase in incentive and motivation to search for a new job.

This paper is extremely useful in explaining reasons behind the reduction of the unemployment rate. One of the main advantages of this abstract is that besides benefits for employment, it also points out disadvantages such as a lot of pressure and fear of new sanctions, people being forced to work on low-paid jobs, the growth in temporary employment and increase in poverty and social inequality. Another advantage of the paper is that researchers estimate the effect of labor market reforms on different groups within unemployed population supporting this decision by the idea that labor market reforms create winners as well as losers: “gains and losses of the reform are very unevenly distributed across population” (Krebs, Scheffel, p.3). Even though the abstract gives a good perspective on the effect of Hartz reform, the main disadvantage of the abstract is the fact that researchers focused mainly on the effect of Hartz IV, the latest of all Hartz reforms, not taking into consideration the impact of the three previous reforms. As some studies show, sometimes the interaction of different earlier reforms with each other is the reason behind the increase of impact of some particular reform. Also, another omission of the abstract is that it overlooks the international effect of the labor market reforms. In today’s highly integrated and globalized labor market, omitting the international effect and taking into consideration only the effect on domestic workers might make results of the analysis biased and might show only a very narrow piece of a bigger picture.

Lena Jacobi and Jochen Kluge represent a different view on how the implementation of the Hartz reforms affected German labor market. As previous economists, Jacobi and Kluge acknowledge the effectiveness and efficiency of Hartz reforms, but they argue that the main reason for the success of reforms lies not in the theory that decrease in unemployment benefits increased the incentive of unemployed to work, but in the reformation and modernization of public employment services. The performance of variety of placement services such as local employment agencies, job centers and others was significantly improved. With the introduction of the Hartz reforms, placement services started to have

quantitative goals that they were supposed to achieve. Besides that, job centers have been allocated additional funds that were used as wage and start-up subsidies that helped unemployed population to “integrate into regular employment” (L.Jacobi, J.Kluve, p.28). Overall, according to Jacobi and Kluve, Hartz reforms mostly resulted in modernization and increased efficiency and effectiveness of job centers, which resulted in fall of unemployment rate.

Economists Rene Fahr and Uwe Sunde in their paper “Did the Hartz Reforms Speed Up the matching Process? A Macro-Evaluation Using Empirical Matching Functions” provide an evaluation of the overall effectiveness of the reforms in terms of how the reforms have affected the speed of matching process between vacant jobs and unemployed job-seekers. What makes this paper considerable is the approach which does not evaluate some specific component of the labor market reforms in Germany, but evaluate overall effect of those. Fahr and Sunde analyze the effectiveness of the reforms from a macroeconomic point of view: they “estimate the structure of the matching technology and changes that occurred in the aftermath of the implementation of Hartz reforms” (R.Fahr, U.Sunde, p.3). Evaluating how the Hartz reforms have affected the process and the speed of the matching between vacant job and job-seekers, researchers also look at this process for different occupations (as in Germany this is one of the main criteria in the job search, and the unemployed in the majority of cases look for the job in their occupation). What is also unique about this work, is that they use data on the monthly basis.

After running regression, Fahr and Sunde have found the following. Overall, all Hartz reforms have a positive effect on the speed of the process of matching unemployed and vacant jobs. First wave of reforms, which consisted from Hartz I and Hartz II sets of regulations, have a significant effect on the process. Second wave, the one that consist of Hartz III reforms, has showed even stronger effect on the speed. What is interesting is that taken together, reforms has showed stronger impact on the unemployment rate than the effect

of separate reform waves. That suggest that both waves were not separate reforms that affected the labor market independently, but that both waves do complement each other, which means that without any of reforms unemployment rate would not be impacted as strong as it was with all the reforms. As for the occupation, results of the regression point that effects across various segments of the German labor market were not homogeneous. For example, compared to other occupations, manufacturing occupations benefited more. Also, the East of Germany were impacted more by reforms. Overall, the results of study suggest that both waves of Hartz reform had a strongly positive effect on the job creation process.

Another study that was conducted by Andrey Launov and Klaus Walde evaluates the importance of public employment agencies in the job finding process. As in Germany public employment agencies is one of the most used sources of vacancies for job seekers, and usually the reduction of the unemployment benefits is believed to be mostly responsible for the reduction of unemployment, researchers Launov and Walde claim that the role of the public agencies in the job finding process is underestimated. As one of the incentives of Hartz reforms was also the increase of effectiveness of employment agencies' work, Launov and Walde estimate the impact of the reforms in structure of public employment agencies on the unemployment rates and compare it with impact of reduction in unemployment benefits. They use the survey data on individual employment histories to estimate reform-caused increase in the effectiveness of public employment agencies in the matching process between job-seekers and vacancies. After they also evaluate the effect of the reduction of unemployment benefits on the unemployment rate and afterwards compare two effects. The model that they used is the “Mortensen-Pissarides matching model with duration-contingent effectiveness of a public employment agencies in matching unemployed workers with vacant jobs and duration-dependent unemployment benefit payments” (A.Launov, K.Walde, p. 7).

Results of this study showed that the improvement of the work of public employment agencies due to the Hartz III set of reforms significantly contributed to the reduction of

unemployment rate. Even though the impact of the reforms in benefits system is also noticeable and significant, the process of reorganizing the work of public employment agencies Hartz reforms has showed the better result than increasing unemployed incentive to work through reducing unemployment benefits. “Quantitatively, the re-organizing of the agency is responsible for a 0.69 to 0.88 percentage point drop of the equilibrium unemployment rate, explaining 17.7% to 22.5% of the observed post-reform decline in unemployment. Benefit reduction, in contrast, adds only 0.18 to 0.20 percentage points to the fall of the equilibrium unemployment rate. This explains merely 4.6% to 5.1% of the observed post-reform unemployment decline” (A.Launov, K.Walde , p. 2). Thus, this paper is a good evidence that proves that the decline in unemployment rate after the implementation of reforms is not mainly due to Hartz IV packet of reforms, but all reforms together contribute to the reduction of the rate of unemployment: as the results of paper show, the instruments used in Hartz III were explaining more of the drop of unemployment rate than Hartz IV’s ones. This finding suggests that while testing the hypothesis on what caused such a miracle in the unemployment in Germany for my project, I have to учесть all of the instruments of the reforms, not leaving out such a variable as effectiveness of the work of public employment agencies. I definitely want to examine more about how exactly the work of employment agencies was re-organized and improved as it is one of the key factors that caused the fall in unemployment rate.

Overall, reviewed literature has helped me to build a general knowledge on the Hartz reforms and its effect on the employment situation in Germany. Even though a lot of studies suggest that the reformation of employment agencies was also a significant part of the Hartz reforms, my main interest in my thesis is the impact of reformation of Unemployment Insurance benefits system and its effect on the unemployment. Therefore, in the next part I examine the theoretical background of the Unemployment Insurance benefits and an example of how regulating UI system can affect the unemployment.

Chapter VI. Discussion of Hartz Reforms

After conducting an extensive research on the German “labor market miracle”, I can conclude that the success of Germany during recent recession is due to the combination of several reasons. Besides the fact that Germany’s labor market significantly differs from the American one, it also a combination of following measures that led to the “German miracle”: 1)improvement of employment services, 2)encouragement of all unemployed regardless their skills and unemployment background to get back to employment and 3)profound reformation of the labor market mechanisms that led to the relaxed regulations of labor market.

As discussed earlier, one of the main points of the Hartz reforms was reformation of employment services. One of the first changes was an increase in the number of local employment agencies and number of workers involved in the employment sector. By this measure Hartz committee made the approach to every unemployed worker more careful and personal, which improved the matching process between worker and employer. Besides, the quality of the employment services improved. Many job trainings and workshops were introduced, which improved jobseekers skills and made them a better fit for jobs. In addition, the structure of employment services was re-organized making agencies more result-oriented. For example, if a employment agency worker failed to place a jobseeker within some period of time, this worker was provided with a new agency and voucher for some job training services. By such significant changes in the system of employment services Germany improved the placement process, which resulted in lower level of turnover and unemployment.

Another quality change in the labor market was implemented by measures aimed to activate all jobseekers to take a job. Limited period for job search, loss of part of benefits in case of refusal of worker to take the job made the process of job-search faster and more

efficient. Reforms also aimed to activate long-term and low-skilled unemployed workers enabling every jobseeker to find the best fit for them. Ability to work on the “one euro job” while still being a recipients of unemployment benefits activated a solid part of labor market increasing the supply of low-skilled labor that could match the high level of demand for temporary workers. Thus, Hartz reforms enabled every unemployed person to get back to employment, which contributed to the decrease in the unemployment rate. In addition, the level and duration of unemployment benefits increased worker’s incentive to take a job. Benefits were not generous, which made jobseekers even more motivated to exit unemployment faster and get back to the decent level of living. Benefits of Hartz IV recipients were not net-income based, thus the only way to sustain a decent level of living and to get more income was to work.

Moreover, Hartz reforms relaxed German labor market that used to be inflexible in the past. Many reforms were implemented in the area of fixed-contracts and temporary employment. Abolishment of many restrictions in that area made market more flexible and open for workers with diverse skills and backgrounds. Such changes shifted demand as well as supply for fixed-contract employment, which resulted in more opportunities and lower unemployment rate. In addition, workers were granted more rights and freedoms, which made employment more secure and stable.

In addition, several start-up programs were implemented. These programs provided opportunities to entrepreneurs to start their own business. Besides providing resources for start, programs also offered some help during different stages of business. These kind of programs not only provided more opportunities for small, local business but also created many types of new jobs.

Besides, one of the most remarkable features of Hartz reforms is that German government had courage to make a difficult decision. At first new reforms caused opposition from citizens and politicians, many scholars also argued that these changes will lead to a crisis, however government proceeded with initial plan and implemented these reforms.

Overall, German reforms that were targeting unemployment differed a lot from American ones. Hartz reforms increased the flexibility of German labor market, improved the communication between employer and employee, made the matching process more efficient, secured workers by providing more rights and opportunities and enabled all kind of unemployed exit unemployment. No doubt, Hartz reform significantly contributed to the “miracle” of German labor market.

Chapter VII. Conclusion

Responses of US and German labor markets to the labor market reforms are very different. Hartz reforms turned German labor market from one of the most inflexible into one of the most flexible and frugal. This transformation resulted into nearly full employment while workers in other European countries protested the lack of jobs on the streets. The US labor market with very generous level and duration of unemployment benefits did not respond to the labor market reforms as good as German one: unemployment rate nearly doubled during the period of recession.

My thesis focused on the unemployment reforms due to the significance of impact of unemployment reforms on the unemployment rate. I particularly focused on differences and similarities between two countries approaches to unemployment reforms. Besides, I implemented empirical research on the effect of duration of unemployment benefits on the duration of unemployment to understand the role of US decision on extending unemployment benefits in the unemployment crisis.

My findings based on the existing literature highlighted few relevant points in comparing the US and German labor market responses to the unemployment crisis. German unemployment benefits are less generous in both duration and value, which makes level of living of long-term unemployed less comfortable, increasing a worker's incentive to take a job when one is available. Besides, the employment training in Germany is more intense and serious than American one, which results in higher number of successful placement of jobseekers. In addition, German employment services offer vast number of subsidies and opportunities that motivate a different type of unemployed workers to get re-employed. Lastly, Germany's labor protection is much stronger than in the US. American approach to handle unemployment crisis was much more general: the goal was to target unemployment as

a whole, while in Germany reforms targeted particular institutions, making changes on the local level.

My findings based on data showed that decision by US Congress to prolong the duration of unemployment benefits during unemployment crisis resulted in longer duration of unemployment and did not motivate workers to exit unemployment faster. Thus, US labor market reforms were not that efficient and effective as German ones.

Overall, I conclude that labor market reforms are complex subject, which can result in success in one country and crisis in another. Therefore, policies that target unemployment insurance payments shall strike the balance between the positive effects of unemployment benefits and the negative side effects.

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Appendix 1. Unemployment Rates for States

| Unemployment Rates for States Annual Average Rankings Year: 2013 | | |
|---|---------------|------|
| Rank | State | Rate |
| | United States | 7.4 |
| 1 | North Dakota | 2.9 |
| 2 | Nebraska | 3.8 |
| 2 | South Dakota | 3.8 |
| 4 | Vermont | 4.4 |
| 5 | Utah | 4.7 |
| 5 | Wyoming | 4.7 |
| 7 | Hawaii | 4.8 |
| 7 | Iowa | 4.8 |
| 9 | Minnesota | 4.9 |
| 10 | New Hampshire | 5.1 |
| 11 | Kansas | 5.3 |
| 11 | Oklahoma | 5.3 |
| 13 | Montana | 5.4 |
| 14 | Virginia | 5.7 |
| 15 | Idaho | 6.1 |
| 16 | Texas | 6.2 |
| 17 | Maine | 6.6 |
| 17 | Maryland | 6.6 |
| 19 | Delaware | 6.7 |
| 19 | Louisiana | 6.7 |
| 19 | Massachusetts | 6.7 |
| 19 | Missouri | 6.7 |
| 19 | West Virginia | 6.7 |
| 24 | Colorado | 6.8 |
| 24 | Wisconsin | 6.8 |
| 26 | Alaska | 6.9 |
| 26 | New Mexico | 6.9 |
| 28 | Washington | 7.0 |
| 29 | Alabama | 7.2 |
| 30 | Florida | 7.3 |

| | | |
|----|----------------------|-----|
| 31 | Arkansas | 7.4 |
| 31 | Pennsylvania | 7.4 |
| 33 | Ohio | 7.5 |
| 34 | South Carolina | 7.6 |
| 35 | Connecticut | 7.7 |
| 35 | Indiana | 7.7 |
| 35 | New York | 7.7 |
| 38 | Arizona | 7.8 |
| 38 | Tennessee | 7.8 |
| 40 | North Carolina | 7.9 |
| 40 | Oregon | 7.9 |
| 42 | Kentucky | 8.0 |
| 43 | Georgia | 8.2 |
| 43 | New Jersey | 8.2 |
| 45 | District of Columbia | 8.5 |
| 46 | Mississippi | 8.7 |
| 47 | California | 8.9 |
| 47 | Michigan | 8.9 |
| 49 | Illinois | 9.1 |
| 50 | Rhode Island | 9.3 |
| 51 | Nevada | 9.5 |

Appendix 2. The Mean of Unemployment Duration by State Unemployment Rate

Response: Unemployment Duration Average duration of unemployment spell, in weeks Standard Deviation

| State Unemployment Rate | Average duration of unemployment spell, in weeks | Standard Deviation |
|-------------------------|--|--------------------|
| 2.9 | 4.34 | .4643294 |
| 3.8 | 4.74 | .345291 |
| 4.4 | 5.67 | .5667617 |
| 4.7 | 6.64 | .4111924 |
| 4.8 | 6.38 | .3955666 |
| 4.9 | 5.86 | .3955666 |
| 5.3 | 6.39 | .4236706 |
| 6.7 | 6.51 | .2696882 |
| 7 | 6.05 | .4680364 |
| 7.4 | 7.19 | .4680364 |
| 7.7 | 7.01 | .274639 |
| 8.5 | 8.14 | .6592621 |
| 8.9 | 7.7 | .2232362 |
| 9.3 | 8.03 | .6459744 |
| 9.5 | 8.37 | .7366243 |