Macroeconomic implications of labor market frictions
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Chapter 5

Conclusion

This thesis examines the costs of business cycles and the way they are shaped by frictions on the labor market. A better understanding of the ease (or difficulty) with which unemployed people find jobs or the way different firms behave over the business cycle can help us evaluate alternative policy measures aimed at boosting employment or smoothing out the negative effects of business fluctuations. These are the issues that have gained in importance after the most recent crisis as unemployment rates remain high in many countries and governments struggle to increase job creation. In the paragraphs that follow, I discuss the main findings of this thesis and possible avenues for future research.

Chapter 2 deals with the question of why business cycles could be detrimental for the economy. Even though there is an underlying feeling that economic fluctuations lower the wellbeing of society, economic theory has struggled to show that. If recessions are followed by times of increased economic activity, it is not clear why the economy should be worse off overall, compared to a world without business cycles. Together with my advisor, Wouter den Haan, we present a framework, in which the presence of business cycles results in permanent losses of output. The reason is an interaction of costs to entry and inefficiencies that force some productive projects to shut down. With inefficiencies in continuation and startup decisions, the presence of business cycles reduces the expected duration (and benefits) of some projects that would otherwise be able to operate in a world without economic fluctuations. Combined with costs to entry, this means that for some of these projects it no longer pays to startup. In other words, the interaction between entry costs and inefficiencies in our model results in a
permanent drop in the level of output in the presence of business cycles. Our estimates show that this permanent drop is in the range of 2 percent and in some cases much higher, which is several orders of magnitude larger than is typically found in other studies.

The model presented in Chapter 2 is based on the assumption that entrepreneurs correctly understand the working of the economy. Specifically, it is assumed that they know how often booms and recession occur allowing them to correctly evaluate the expected benefits of starting a business. However, in reality it is more likely that entrepreneurs do not have such information and instead they need to learn it or form beliefs about it. One can imagine that after a severe recession, such as the one we have just experienced, entrepreneurs form relatively more pessimistic beliefs about the frequency, or severity, of recessions. This would in turn lower the expected benefits of their projects. The result would be that recessions are followed by periods of protracted lower firm entry, only because beliefs about future economic conditions turn relatively more pessimistic after downturns. This would result in even more severe business cycle costs than predicted by our model.

Having established that business cycles can be detrimental for the economy, Chapter 3 examines the role of the severity of search and matching frictions, ”match efficiency”, on the unemployment rate over the business cycle. Using data from the U.S. economy and employing econometric techniques, I show that match efficiency is estimated to be moving together with the cycle. This means that recessions are times when unemployed workers have a harder time finding a job, not only because there are less vacancies and more unemployed competing for them, but also because the severity of frictions on the labor market is larger. Estimates suggest that up to 1/5 of the unemployment run-up during the most severe recessions can be attributed to a deterioration in match efficiency alone.

To further analyze the role of match efficiency in determining aggregate labor market dynamics, Chapter 3 also examines a simple theoretical model. I show that measured match efficiency moves together with the business cycle in a model incorporating search and matching frictions, workers with different skills and firms which are free to flexibly hire and dismiss employees.
The theoretical model predicts that taking into account the changes in job requirements of firms and/or the skill characteristics of the unemployed over the business cycle should result in estimates of match efficiency that are less volatile or even close to constant. An interesting extension of the presented empirical work would be to include such measures of skill characteristics of jobs and/or unemployed workers. If the match efficiency estimates would then turn out to be less volatile, it would provide support for the specific channel predicted by the model.

Finally, Chapter 4 studies the role of young businesses in determining aggregate outcomes both on the labor market and in the economy as a whole. Recent studies have shown that the well established negative relationship between a firm’s size and its growth vanishes once the age of firms is taken into account. Furthermore, recent studies show that young firms are mainly small, but not all small firms are young. Rates of job creation and job destruction fall with firm age and young firms create relatively more jobs. Finally, young firms are found to have a higher risk of going out of business, but if they survive they tend to grow faster than older firms. Using the latest version of the Business Dynamics Statistics database, I extend these findings by showing that young firms are also more volatile than older ones and that business startups are important for determining the developments of the unemployment rate.

Then, I build a novel general equilibrium model incorporating labor market frictions and heterogeneous firms which differ in their productivity. Firms in this model are free to enter the economy and if individual business conditions are so low that it no longer pays to operate, they choose to shut down. Furthermore, firms choose whether to expand or shrink their workforce depending on aggregate and firm specific conditions.

This model is shown to be consistent with the above-mentioned empirical facts relating to firm age. The key to understanding the models’ performance is an inherent selection process of successful firms. Only the relatively more efficient firms are able to survive, expand and grow old. Therefore, younger firms exhibit a higher risk of shutting down and thus also a higher rate of job destruction. Moreover, younger firms are mainly small and as such they can take advantage of lower worker turnover and the associated costs (in absolute terms) resulting in them having relatively more resources for expansion compared to older businesses. The model is also consistent with the
dynamics of aggregate labor market variables, such as the unemployment rate, the vacancy rate and the probability of finding a job. The model correctly replicates the co-movement of these variables over the business cycle and also predicts realistic sizes of their fluctuations.

The model is then used to analyze the impact of a government policy aimed at supporting young firms as drivers of job creation. Such a measure was recently proposed under the "Startup America" initiative of the White House and this experiment thus addresses a highly relevant question. The results suggest that subsidizing firm entry does increase welfare as more new firms lower unemployment and increase aggregate output. However, if the government focuses its resources only on existing young firms, welfare decreases. The reason is that subsidizing existing firms enables relatively less productive firms to remain in business crowding out entrants. These two effects result in lower average firm productivity. Moreover, the reallocation of workers from relatively less productive firms to more efficient ones is hampered. The overall effect on the economy is that aggregate output falls and thus welfare decreases.

Although the presented model performs well in capturing the empirical facts related to firm age and also delivers realistic aggregate labor market dynamics, it can be extended in several dimensions. Specifically, enabling workers to search for new jobs while being employed or allowing them to quit would influence the worker reallocation process since in the presented model workers can change employers only after exogenous separations or if their current employer shuts down. Moreover, considering a wider range of frictions, such as financial frictions which are likely to have a greater impact on young firms, could have the potential of strengthening the presented results. Incorporating financial frictions could magnify the effects of aggregate productivity shocks even more as worsened conditions for obtaining external funds during downturns would further discourage firm entry. Finally, the model indicates that the number of business start-ups is a crucial aspect to overall job creation. Moreover, the policy exercise documented that new firms are key in not only creating jobs, but also increasing productivity. Further analysis of the entry decision supported by empirical evidence related to characteristics of new firms could sharpen the policy implications of the model.