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External review of the dissertation *Essays in Development Economics* by Trang Thanh Tran

Overall, this dissertation satisfies the content requirements for a PhD thesis in economics. I recommend that the student proceed with the defense of the dissertation.

Chapter 1: Effects of minimum wage on the formal and informal sectors: Evidence from Vietnam

This chapter examines the impact of a simplification of minimum wages in Vietnam on employment, hours worked, and income. The policy is a 2009 change from a single national minimum wage to multiple regional minimum wages. The new minimum wage assigned to a specific region could be one of four levels (from lowest to highest). "The regionalization of minimum wages was specifically designed to account for differences in prices and local labor market conditions across regions" (p.5). These local labor market conditions may include employment levels, wages, incomes, and so on.

As noted by the author, for a variety of reasons, the estimate of the impact of minimum wages on incomes is not a reliable estimate of the causal effect. As noted in the dissertation, "Given these limitations, the primary objective of this paper remains to examine the employment effects of the minimum wage policy" (p.29). For this reason, I will focus my comments on the employment effects.

1. The most interesting and novel finding is that higher minimum wages result in fewer hours worked by those who remain in the formal sector, and that many of the workers whose hours have fallen subsequently take up additional work as part-time workers in the informal sector. This suggests that additional part-time work can help maintain incomes as hours worked falls. I have never before seen this finding in the literature, and I think by itself this is a publishable result.

2. The author also argues that the higher minimum wage increases the total number of employed, increases the total number of informal workers, and causes no change in the number of those employed in formal firms. I would argue that this is not necessarily a good outcome for workers because one plausible reason for these results is that the outcome variable in the equations used to estimate this effect is the ratio of employed workers in non-agriculture relative to employed workers in agriculture. Given this, a more appropriate interpretation of the results would be that an increase in minimum wages in non-agricultural sectors leads to a rise in the non-agricultural employment/agricultural employment ratio, and the informal employment/agricultural employment ratio. The increase in these ratios could be due to a fall in employment in agriculture and not an increase in non-agricultural employment. In this case the total employment in the economy may have fallen even as employment in the non-agricultural

informal sector increased (because employment in the agriculture sector falls by even more). This pattern is consistent with a dualistic theory of labor markets and development, such as that described in classic articles by Harris and Todaro (1970) and Fields (1975). In these dualistic labor markets agricultural workers can be enticed into urban areas by formal sector wages that are artificially kept above the market clearing wage. Therefore, an increase in minimum wages for non-agricultural formal workers will increase the wage that agricultural workers expect to receive in non-agricultural work. But because the expected wage is equal to the probability of finding a formal job multiplied by the formal wage, many who migrate to urban areas end up unemployed or go to work in low-wage jobs in the informal sector. According to the dualistic labor market model, because many of these formerly employed agricultural workers are now unemployed, the total employment of workers in the economy (agriculture and non-agriculture) falls.

I also note that the author presents some evidence that the scenario that I described above is not what is happening. Specifically, the author finds evidence that the transitions of workers from the agricultural to the non-agricultural informal or formal sectors were not statistically significant when the minimum wages were regionalized. This is evidence that the change in the non-agricultural employment/agricultural employment ratio was more likely due to an increase in non-agricultural employment rather than a fall in agricultural employment.

3. A serious limitation of the analysis of both employment and hours worked in the formal sector is the likelihood that the minimum wage treatment variable and these two outcomes suffer from reverse causality. As noted above, "The regionalization of minimum wages was specifically designed to account for differences in prices and local labor market conditions across regions" (p.5). These local labor market conditions may include employment levels, wages, incomes, and so on. Therefore, it is likely that a better labor market in a region causes the government to impose a higher minimum wage, and not that higher minimum wages increase total employment. There should be more discussion of this possible simultaneity and why the author does not believe that it invalidates the findings in this chapter.

4. On a smaller point, please clarify whether workers with formal jobs who also have informal part-time jobs are considered both formal and informal workers in your analysis.

Chapter 2: Racing to the top? Foreign firms and local markets: Evidence from Vietnam

This chapter analyzes a policy introduced in 2011 that unified the minimum wage level for domestic and foreign firms in Vietnam. Before 2011 Vietnam had separate minimum wages for domestic and foreign firms. After 2011 the minimum wage for domestic firms was increased to the minimum wage for foreign firms. The data examines formal sector private firms, and does not include data on informal firms. The analysis uses difference-in-difference analysis and event studies. This methodological approach is appropriate.

The author presents evidence that the unification of the minimum wage reduced the minimum wage in non-agricultural foreign firms relative to that in non-agricultural domestic firms. The author presents evidence that this unification of the minimum wage led to an increase in the ratio of employment in foreign firms relative to the employment in domestic firms. This increase in relative foreign firm employment is larger for younger firms, for manufacturing, and for firms with a higher total factor productivity.

1. In general, I find these results interesting and logical. However, I note that the observed increase in the ratio of employment in foreign firms to employment in domestic firms does not necessarily mean that employment in foreign firms increased. That is, the fall in the ratio of

employment in foreign firms to domestic firms could be due to no change in employment in foreign firms that is accompanied by a fall in employment in domestic firms as minimum wages rose for domestic firms. I find this interpretation more plausible, as it is consistent with simple supply and demand theory where a higher minimum wage leads to reduced employment. The author should note this in the analysis, and explain why the author does not believe that it invalidates the findings in this chapter.

Chapter 3: The subjective well-being effects of short-term displacement: Evidence from inter-ethnic conflict in Kyrgyzstan

The analysis in this chapter is well-done. The data and empirical techniques are appropriate and well-executed. The findings are interesting and logical. I have no additional comments on this chapter.

Sincerely,
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