Replicating the Results from

Anabela Carneiro, Paulo Guimarães, and Pedro Portugal "Real Wages and the Business Cycle: Accounting for Worker, Firm, and Job Title Heterogeneity"

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1. Permissions to Acess the *Quadros de Pessoal* Data Set

Data employed in this paper are worker-level data obtained from the data sets administered by the Portuguese Ministry of Labor and Social Solidarity, Department Statistics (GEP). All data is proprietary and cannot be disclosed by the authors. However, upon request, the entities administering the data can made them available for research purposes.

Quadros de Pessoal may be accessed locally at different institutions in Portugal (University of Minho, University of Coimbra, NOVA University of Lisbon, etc) including the Faculty of Economics at the University of Porto. Permissions should be obtained from Anabela Carneiro (quadrospessoal@fep.up.pt).

2. Data Organization
   The final data set (in stata format) is available at the Faculty of Economics at the University of Porto in the following directory:
   /uporto/qpessoal/qp_86_07.dta

3. Do Files to replicate the results
   - To replicate the results in Table 1 run *Table1.do*;
   - To replicate the results in Table 2 run *Table2.do*;
   - To replicate the results in Table 3 run *Table3.do*;
   - To replicate the results in Table 4 run *Table4.do*;
   - To replicate the results in Table 5 run *Table5.do*.

4. Stata Codes
   Stata user-written commands that estimate a model with two and three high-dimensional fixed effects are provided by the authors in the attach files *reg2hdfe.ado* and *reg3hdfe.ado*. For more details on these procedures see Guimarães and Portugal (2010), "A Simple Feasible Procedure to Fit Models with High-Dimensional Fixed Effects.", *Stata Journal*, 10 (4): 628-49.