**Supplementary information for**

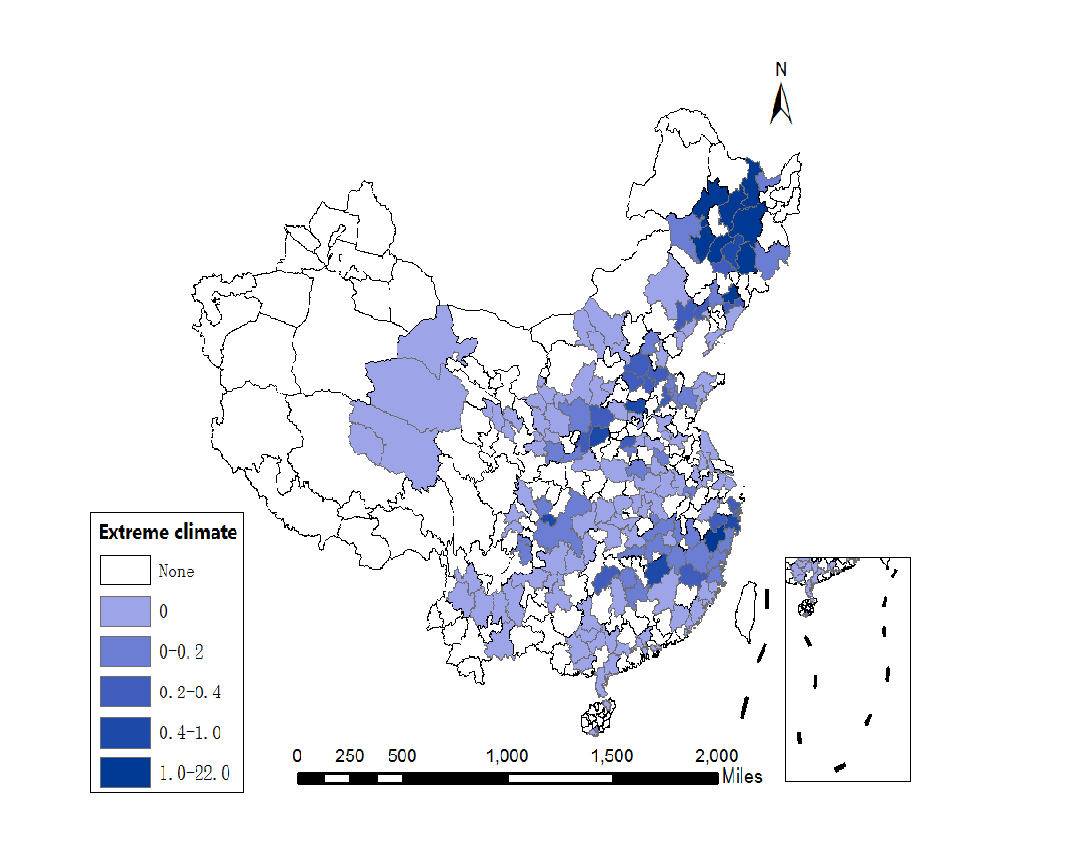
**Climate variations, culture and economic behaviours of Chinese households**

**1. Supplementary notes for calculating climate variation**

We use the data from the National Meteorological Information Center (NMIC) ranging from 1981 to 2010 (). This dataset reports monthly temperature () at the prefecture level cities in China, denoted as ; for each city in each month, an average value of temperature over thirty years periods is calculated as , where N = 30. Climate variation in terms of long-term temperature variations over a year can be calculated as:

The function denotes standard deviations of the variables in the brackets.

The second variable is *Temp\_extre*, a measure of the days with extreme weather conditions. Here, we define temperature over 40 degrees Celsius or lower than minus 30 degrees as extreme weather conditions. The variable is a simple annual count of the number of days in the aforementioned conditions; the annual counts are then averaged over 30 years. A graphical illustration of this variable is given in Figure 1.1.



**Figure 1.1. Average days in extreme weather conditions of prefecture cities over the period between 1981 and 2010.**

**2. Supplementary tables: using 2015 round survey for robustness check**

The main argument in our paper is that the impacts of climate variation on households’ economic behaviour is via a cultural channel, thus those effects should be long-term and unlikely to change significantly if we move forward. To confirm that hypothesis, the following two tables (Table 2.1 and Table 2.2) reproduce Table 2 and 3 in the main paper. There is some difference, but only numerical. The main conclusions stand firmly consistent.

**Table 2.1. Baseline regression results**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Model** | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| **Dependent variables** | Consum | N\_consum | U\_consum | Income | Wage income | Other income | Saving | Risky |
| **Temp\_std** | -0.113\*\*\* | -0.101\*\*\* | -0.007 | -0.087\*\*\* | -0.073\*\*\* | -0.006 | 1.430\*\*\* | -0.209\*\*\* |
|  | (0.011) | (0.007) | (0.005) | (0.020) | (0.010) | (0.016) | (0.144) | (0.040) |
| **Income** | 0.238\*\*\* | 0.140\*\*\* | 0.088\*\*\* |  |  |  | 2.220\*\*\* | 0.782\*\*\* |
|  | (0.006) | (0.004) | (0.003) |  |  |  | (0.042) | (0.029) |
| **F\_size** | 0.446\*\*\* | 0.323\*\*\* | 0.114\*\*\* | 0.488\*\*\* | 0.031 | 0.441\*\*\* | -4.082\*\*\* | -0.176\*\* |
|  | (0.022) | (0.015) | (0.010) | (0.041) | (0.020) | (0.033) | (0.290) | (0.073) |
| **Age** | -0.002 | -0.002 | 0.000 | 0.004 | 0.005\*\*\* | -0.002 | 0.053\*\* | 0.009 |
|  | (0.002) | (0.001) | (0.001) | (0.004) | (0.002) | (0.003) | (0.026) | (0.008) |
| **Employ** | 0.094\*\*\* | 0.064\*\*\* | 0.028\*\* | 1.528\*\*\* | 1.690\*\*\* | -0.175\*\*\* | 4.407\*\*\* | -0.832\*\*\* |
|  | (0.029) | (0.019) | (0.013) | (0.051) | (0.026) | (0.040) | (0.371) | (0.101) |
| **Marital** | 0.132 | 0.084 | 0.060 | 0.227 | 0.058 | 0.175 | -1.918\* | 0.547\* |
|  | (0.082) | (0.055) | (0.039) | (0.156) | (0.076) | (0.123) | (1.048) | (0.322) |
| **Education** | 0.038 | 0.024 | 0.015 | 0.241\*\* | 0.168\*\*\* | 0.027 | 1.588\*\* | 0.518\*\* |
|  | (0.061) | (0.040) | (0.029) | (0.112) | (0.055) | (0.089) | (0.764) | (0.245) |
| **Health** | 0.454\*\*\* | 0.291\*\*\* | 0.145\*\*\* | 1.199\*\*\* | 0.581\*\*\* | 0.595\*\*\* | -1.002\* | 0.413\*\*\* |
|  | (0.036) | (0.024) | (0.017) | (0.065) | (0.032) | (0.052) | (0.516) | (0.141) |
| **Party** | 0.501\*\*\* | 0.219\*\*\* | 0.233\*\*\* | 2.231\*\*\* | 0.862\*\*\* | 1.330\*\*\* | 0.167 | 2.819\*\*\* |
|  | (0.107) | (0.066) | (0.053) | (0.204) | (0.100) | (0.160) | (1.121) | (0.473) |
| **Gender** | -0.011 | -0.013 | 0.021 | 0.232\* | -0.014 | 0.226\*\* | 0.688 | -0.010 |
|  | (0.065) | (0.043) | (0.032) | (0.127) | (0.061) | (0.102) | (0.841) | (0.266) |
| **Rural** | -1.337\*\*\* | -0.894\*\*\* | -0.434\*\*\* | -3.146\*\*\* | -2.038\*\*\* | -1.094\*\*\* | 5.963\*\*\* | -3.267\*\*\* |
|  | (0.063) | (0.044) | (0.029) | (0.105) | (0.054) | (0.084) | (0.977) | (0.180) |
| **Hukou** | -0.624\*\*\* | -0.459\*\*\* | -0.167\*\*\* | -0.957\*\*\* | -0.545\*\*\* | -0.320\* | 4.801\*\*\* | 0.526 |
|  | (0.107) | (0.070) | (0.051) | (0.213) | (0.099) | (0.173) | (1.116) | (0.418) |
| **GDP\_city** | 0.960\*\*\* | 0.658\*\*\* | 0.288\*\*\* | 3.037\*\*\* | 1.290\*\*\* | 1.656\*\*\* | -2.923\*\*\* | 3.310\*\*\* |
|  | (0.053) | (0.035) | (0.025) | (0.094) | (0.046) | (0.074) | (0.685) | (0.192) |
| **Structure** | -0.024\*\*\* | -0.016\*\*\* | -0.008\*\*\* | -0.066\*\*\* | -0.014\*\*\* | -0.048\*\*\* | 0.176\*\*\* | -0.103\*\*\* |
|  | (0.003) | (0.002) | (0.002) | (0.006) | (0.003) | (0.005) | (0.038) | (0.013) |
| **Constant** | -6.457\*\*\* | -3.994\*\*\* | -2.355\*\*\* | -25.975\*\*\* | -12.155\*\*\* | -13.097\*\*\* | 13.407 | -25.690\*\*\* |
|  | (0.613) | (0.412) | (0.291) | (1.091) | (0.544) | (0.865) | (8.238) | (2.180) |
| ***N*** | 27109 | 27109 | 27109 | 27109 | 27109 | 27109 | 24060 | 24823 |
| **R2** | 0.293 | 0.270 | 0.176 | 0.150 | 0.240 | 0.057 | 0.130 | 0.141 |
| **F** | 440.044 | 422.541 | 215.586 | 331.337 | 561.828 | 130.090 | 247.857 | 210.940 |

*Note: robust standard errors are in brackets. \*, \*\* and \*\*\* denote significance levels at 10%, 5% and 1%, respectively.*

**Table 2.2. Using extreme days as a measure of climate**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Model** | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| **Dependent variables** | Consum | N\_consum | U\_consum | Income | Wage income | Other income | Saving | Risky |
| **Temp\_extre** | -0.060\*\*\* | -0.057\*\*\* | 0.001 | -0.053\*\* | -0.069\*\*\* | 0.024 | 0.738\*\* | -0.319\*\*\* |
|  | (0.014) | (0.009) | (0.007) | (0.025) | (0.015) | (0.021) | (0.292) | (0.045) |
| **Income** | 0.238\*\*\* | 0.141\*\*\* | 0.088\*\*\* |  |  |  | 2.206\*\*\* | 0.784\*\*\* |
|  | (0.006) | (0.004) | (0.003) |  |  |  | (0.042) | (0.029) |
| **Controls** | Y | Y | Y | Y | Y | Y | Y | Y |
| **Constant** | -7.379\*\*\* | -4.802\*\*\* | -2.438\*\*\* | -26.657\*\*\* | -12.583\*\*\* | -13.311\*\*\* | 24.849\*\*\* | -26.054\*\*\* |
|  | (0.628) | (0.422) | (0.297) | (1.119) | (0.553) | (0.886) | (8.287) | (2.226) |
| ***N*** | 27109 | 27109 | 27109 | 27109 | 27109 | 27109 | 24060 | 24823 |
| **R2** | 0.290 | 0.265 | 0.176 | 0.150 | 0.239 | 0.057 | 0.127 | 0.141 |
| **F** | 437.500 | 417.445 | 215.415 | 329.602 | 560.693 | 128.517 | 241.668 | 211.185 |

*Note: robust standard errors are in brackets. \*, \*\* and \*\*\* denote significance levels at 10%, 5% and 1%, respectively.*

**3. Supplementary tables: sub-sample analysis (rural and urban differences).**

One of the major issues in China is the large difference between rural and urban area (Nolan and White, 1984; Wang, 1995). Their life-style, economic development and preference are much different from each other (Li et al., 2019), thus there may be differences between rural and urban residents. As risky asset investment is not common in rural China, the sub-sample analysis here applies mainly on consumption, savings and income.

Table 3.1 reports sub-sample analysis on consumption, the results are generally consistent with the full sample baseline regression results. In other words, climate variations can reduce consumption levels for both urban and rural households, and the negative impact is mainly through necessary consumption. It is though interesting to see that the impacts on urban households are higher.

**Table 3.1. Consumption: Rural vs. Urban households**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Model** | (1) | (2) | (3) | (4) | (5) | (6) |
| **Dependent variables** | Consum | Consum | N\_consum | N\_consum | U\_consum | U\_consum |
|  | (Rural) | (Urban) | (Rural) | (Urban) | (Rural) | (Urban) |
| **Temp\_std** | -0.035\*\*\* | -0.065\*\*\* | -0.032\*\*\* | -0.056\*\*\* | -0.003 | -0.010 |
|  | (0.009) | (0.010) | (0.004) | (0.005) | (0.007) | (0.007) |
| **Income** | 0.243\*\*\* | 0.250\*\*\* | 0.112\*\*\* | 0.119\*\*\* | 0.124\*\*\* | 0.126\*\*\* |
|  | (0.020) | (0.007) | (0.008) | (0.003) | (0.014) | (0.005) |
| **F\_size** | 0.236\*\*\* | 0.367\*\*\* | 0.162\*\*\* | 0.259\*\*\* | 0.067\*\*\* | 0.087\*\*\* |
|  | (0.022) | (0.024) | (0.010) | (0.011) | (0.016) | (0.017) |
| **Age** | -0.037\*\*\* | -0.040\*\*\* | -0.019\*\*\* | -0.016\*\*\* | -0.019\*\*\* | -0.023\*\*\* |
|  | (0.002) | (0.002) | (0.001) | (0.001) | (0.002) | (0.001) |
| **Employ** | -0.120\*\*\* | -0.051\* | -0.081\*\*\* | -0.073\*\*\* | -0.034\* | 0.027 |
|  | (0.028) | (0.029) | (0.012) | (0.013) | (0.020) | (0.020) |
| **Marital** | 0.108 | 0.384\*\*\* | 0.055\* | 0.256\*\*\* | 0.055 | 0.159\*\*\* |
|  | (0.078) | (0.067) | (0.033) | (0.032) | (0.058) | (0.046) |
| **Education** | 0.336\*\*\* | 0.633\*\*\* | 0.235\*\*\* | 0.415\*\*\* | 0.098 | 0.212\*\*\* |
|  | (0.104) | (0.055) | (0.047) | (0.026) | (0.075) | (0.039) |
| **Health** | 0.186\*\*\* | 0.188\*\*\* | 0.092\*\*\* | 0.139\*\*\* | 0.085\*\* | 0.036 |
|  | (0.054) | (0.058) | (0.024) | (0.027) | (0.040) | (0.042) |
| **Party** | 0.357\*\*\* | 0.209\*\*\* | 0.197\*\*\* | 0.124\*\*\* | 0.157\*\* | 0.078 |
|  | (0.105) | (0.071) | (0.049) | (0.032) | (0.078) | (0.051) |
| **Gender** | 0.065 | 0.071 | -0.005 | 0.022 | 0.073\* | 0.059 |
|  | (0.055) | (0.050) | (0.023) | (0.023) | (0.043) | (0.036) |
| **Hukou** | 0.379 | 0.145\* | -0.012 | 0.033 | 0.413\*\*\* | 0.132\*\* |
|  | (0.267) | (0.084) | (0.149) | (0.040) | (0.121) | (0.060) |
| **GDP\_city** | 0.422\*\*\* | 0.845\*\*\* | 0.255\*\*\* | 0.606\*\*\* | 0.165\*\*\* | 0.255\*\*\* |
|  | (0.060) | (0.047) | (0.025) | (0.021) | (0.044) | (0.033) |
| **Structure** | -0.009\*\*\* | -0.020\*\*\* | -0.006\*\*\* | -0.013\*\*\* | -0.003 | -0.007\*\*\* |
|  | (0.003) | (0.002) | (0.001) | (0.001) | (0.002) | (0.002) |
| **Constant** | -1.080\* | -4.562\*\*\* | -0.513\* | -3.728\*\*\* | -0.553 | -0.965\*\*\* |
|  | (0.607) | (0.506) | (0.267) | (0.234) | (0.441) | (0.361) |
| ***N*** | 8174 | 17562 | 8174 | 17562 | 8174 | 17562 |
| **R2** | 0.203 | 0.336 | 0.268 | 0.395 | 0.090 | 0.178 |
| **F** | 101.373 | 427.354 | 139.344 | 606.796 | 38.373 | 163.986 |

*Note: robust standard errors are in brackets. \*, \*\* and \*\*\* denote significance levels at 10%, 5% and 1%, respectively.*

Table 3.2 reports sub-sample analysis for income and savings. Once again, the general direction of impacts on income is similar to the main sample. It is worth to note that the impacts on rural households’ saving rate is significantly higher than that on urban households (insignificant but positive). The arguments behind this are limited ability for rural households to hedge against climate risk relative to urban households (Chichilisky and Heal, 1993).

**Table 3.2. Income and Saving: Rural vs. Urban households**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Model** | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| **Dependent variables** | Income | Income | Wage income | Wage income | Other income | Other income | Saving | Saving |
|  | (Rural) | (Urban) | (Rural) | (Urban) | (Rural) | (Urban) | (Rural) | (Urban) |
| **Temp\_std** | -0.042\*\*\* | -0.153\*\*\* | -0.095\*\*\* | -0.077\*\*\* | 0.055\*\*\* | -0.058\*\*\* | 1.008\*\*\* | 0.297 |
|  | (0.013) | (0.018) | (0.010) | (0.013) | (0.010) | (0.015) | (0.298) | (0.185) |
| **Income** |  |  |  |  |  |  | 7.011\*\*\* | 3.631\*\*\* |
|  |  |  |  |  |  |  | (0.392) | (0.074) |
| **F\_size** | -0.060\*\* | 0.110\*\* | -0.186\*\*\* | -0.248\*\*\* | 0.129\*\*\* | 0.347\*\*\* | -6.070\*\*\* | -4.886\*\*\* |
|  | (0.027) | (0.043) | (0.024) | (0.029) | (0.021) | (0.034) | (0.564) | (0.401) |
| **Age** | -0.015\*\*\* | -0.013\*\*\* | -0.010\*\*\* | -0.045\*\*\* | -0.005\* | 0.036\*\*\* | 0.679\*\*\* | 0.786\*\*\* |
|  | (0.003) | (0.003) | (0.002) | (0.002) | (0.002) | (0.003) | (0.067) | (0.033) |
| **Employ** | 0.822\*\*\* | 1.237\*\*\* | 0.898\*\*\* | 1.739\*\*\* | -0.076\*\*\* | -0.541\*\*\* | 9.784\*\*\* | 6.296\*\*\* |
|  | (0.033) | (0.049) | (0.030) | (0.034) | (0.026) | (0.040) | (0.724) | (0.477) |
| **Marital** | 0.121 | 0.940\*\*\* | -0.152\* | 0.552\*\*\* | 0.257\*\*\* | 0.381\*\*\* | -2.515 | -1.900 |
|  | (0.094) | (0.123) | (0.082) | (0.082) | (0.077) | (0.099) | (2.576) | (1.231) |
| **Education** | 1.067\*\*\* | 2.510\*\*\* | 0.865\*\*\* | 1.873\*\*\* | 0.196 | 0.547\*\*\* | -2.684 | -0.415 |
|  | (0.150) | (0.097) | (0.116) | (0.062) | (0.124) | (0.080) | (2.350) | (0.964) |
| **Health** | 0.283\*\*\* | 0.605\*\*\* | 0.036 | 0.322\*\*\* | 0.242\*\*\* | 0.266\*\*\* | -2.570 | 1.657 |
|  | (0.070) | (0.102) | (0.057) | (0.068) | (0.057) | (0.080) | (1.748) | (1.235) |
| **Party** | 1.053\*\*\* | 1.410\*\*\* | 0.572\*\*\* | 1.247\*\*\* | 0.412\*\*\* | 0.146 | -4.788\* | 3.063\*\*\* |
|  | (0.180) | (0.130) | (0.124) | (0.097) | (0.142) | (0.099) | (2.617) | (1.062) |
| **Gender** | -0.032 | -0.099 | 0.331\*\*\* | 0.177\*\*\* | -0.355\*\*\* | -0.259\*\*\* | -1.014 | -1.600\* |
|  | (0.069) | (0.092) | (0.057) | (0.063) | (0.058) | (0.073) | (1.678) | (0.869) |
| **Hukou** | -0.794\* | 0.299\* | -0.747\*\*\* | 0.552\*\*\* | 0.044 | -0.264\* | -9.896\* | -4.499\*\*\* |
|  | (0.439) | (0.167) | (0.282) | (0.114) | (0.361) | (0.136) | (5.735) | (1.422) |
| **GDP\_city** | 0.911\*\*\* | 2.837\*\*\* | 0.443\*\*\* | 1.686\*\*\* | 0.462\*\*\* | 0.962\*\*\* | -3.063\*\* | -3.339\*\*\* |
|  | (0.072) | (0.079) | (0.056) | (0.055) | (0.061) | (0.062) | (1.548) | (0.814) |
| **Structure** | -0.012\*\*\* | -0.071\*\*\* | 0.002 | -0.042\*\*\* | -0.015\*\*\* | -0.023\*\*\* | 0.110 | 0.093\*\* |
|  | (0.003) | (0.004) | (0.003) | (0.003) | (0.003) | (0.003) | (0.087) | (0.041) |
| **Constant** | -6.196\*\*\* | -23.874\*\*\* | -2.487\*\*\* | -13.615\*\*\* | -3.749\*\*\* | -8.903\*\*\* | -23.597 | -12.960 |
|  | (0.783) | (0.841) | (0.609) | (0.588) | (0.665) | (0.663) | (16.267) | (9.188) |
| ***N*** | 8174 | 17562 | 8174 | 17562 | 8174 | 17562 | 6744 | 15613 |
| **R2** | 0.147 | 0.201 | 0.185 | 0.310 | 0.033 | 0.056 | 0.184 | 0.192 |
| **F** | 94.407 | 282.265 | 108.759 | 520.598 | 19.761 | 96.905 | 76.378 | 257.008 |

*Note: robust standard errors are in brackets. \*, \*\* and \*\*\* denote significance levels at 10%, 5% and 1%, respectively.*

Table 3.3 reports rural/urban sub-sample analysis on a set of measurement on households’ investment in risky financial assets. In addition to the share (*Risky*), we define two additional variables: *d\_risk* (dummy variable—whether a household has any investment in risky financial assets), *lnriskfinance* (natural logarithm of total investment in risky assets). No matter which proxy is used, there are clear rural/urban differences. Climate effect on risky asset investment only applies to urban households. It is not entirely surprising given the fact that a large gap exists between urban and rural households in China, especially referring to the investment in risky assets (Sui and Niu, 2018).

**Table 3.3 Risky financial assets investment: Rural vs. Urban households**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Model** | (1) | (2) | (3) | (4) | (5) | (6) |
| **Dependent variables** | Risky | Risky | d\_risk | d\_risk | lnriskfinance | lnriskfinance |
|  | (Rural) | (Urban) | (Rural) | (Urban) | (Rural) | (Urban) |
| **Temp\_std** | -0.003 | -0.354\*\*\* | 0.003 | -0.034\*\*\* | -0.002 | -0.069\*\*\* |
|  | (0.021) | (0.058) | (0.018) | (0.006) | (0.004) | (0.011) |
| **Income** | 0.131\*\*\* | 0.488\*\*\* | 0.046\*\*\* | 0.037\*\*\* | 0.029\*\*\* | 0.133\*\*\* |
|  | (0.047) | (0.034) | (0.007) | (0.002) | (0.008) | (0.007) |
| **F\_size** | 0.005 | -0.319\*\*\* | 0.007 | -0.032\*\* | 0.004 | -0.060\*\*\* |
|  | (0.032) | (0.113) | (0.033) | (0.012) | (0.007) | (0.022) |
| **Age** | -0.006 | 0.025\*\* | -0.009\*\* | -0.001 | -0.002\*\* | -0.000 |
|  | (0.004) | (0.010) | (0.003) | (0.001) | (0.001) | (0.002) |
| **Employ** | -0.144\*\*\* | -0.497\*\*\* | -0.080\* | -0.053\*\*\* | -0.032\*\*\* | -0.127\*\*\* |
|  | (0.054) | (0.136) | (0.041) | (0.015) | (0.010) | (0.027) |
| **Marital** | -0.005 | 2.539\*\*\* | 0.171 | 0.256\*\*\* | 0.007 | 0.533\*\*\* |
|  | (0.177) | (0.377) | (0.155) | (0.039) | (0.031) | (0.073) |
| **Education** | 0.542\*\* | 5.342\*\*\* | 0.319\*\*\* | 0.599\*\*\* | 0.124\*\* | 1.184\*\*\* |
|  | (0.252) | (0.340) | (0.112) | (0.030) | (0.050) | (0.064) |
| **Health** | 0.051 | 0.748\*\* | -0.038 | 0.128\*\*\* | -0.002 | 0.170\*\*\* |
|  | (0.105) | (0.347) | (0.102) | (0.039) | (0.021) | (0.065) |
| **Party** | 0.197 | 1.865\*\*\* | 0.234\* | 0.198\*\*\* | 0.030 | 0.475\*\*\* |
|  | (0.261) | (0.491) | (0.133) | (0.033) | (0.044) | (0.091) |
| **Gender** | 0.256\*\* | 1.003\*\*\* | 0.081 | 0.093\*\*\* | 0.029 | 0.206\*\*\* |
|  | (0.118) | (0.299) | (0.100) | (0.027) | (0.022) | (0.056) |
| **Hukou** | -0.672 | 3.311\*\*\* | -0.094 | 0.323\*\*\* | -0.047 | 0.750\*\*\* |
|  | (1.006) | (0.425) | (0.318) | (0.045) | (0.140) | (0.085) |
| **GDP\_city** | 0.185 | 3.753\*\*\* | 0.146 | 0.418\*\*\* | 0.036 | 0.829\*\*\* |
|  | (0.122) | (0.252) | (0.090) | (0.027) | (0.023) | (0.049) |
| **Structure** | 0.006 | -0.109\*\*\* | 0.006 | -0.007\*\*\* | 0.001 | -0.024\*\*\* |
|  | (0.006) | (0.015) | (0.005) | (0.001) | (0.001) | (0.003) |
| **Constant** | -1.033 | -35.759\*\*\* | -3.820\*\*\* | -5.883\*\*\* | -0.214 | -7.769\*\*\* |
|  | (1.749) | (2.735) | (1.036) | (0.303) | (0.278) | (0.528) |
| ***Margins(Temp\_std)*** |  |  |  | -0.006\*\*\* |  |  |
| ***N*** | 7199 | 16326 | 7199 | 16326 | 7199 | 16326 |
| **R2/Pseudo R2** | 0.015 | 0.099 | 0.083 | 0.158 | 0.019 | 0.153 |
| **F/** **Wald** | 1.884 | 96.819 | 95.66 | 1923.29 | 2.639 | 159.285 |

*Note: robust standard errors are in brackets. \*, \*\* and \*\*\* denote significance levels at 10%, 5% and 1%, respectively.*

**4. Supplementary tables: income and education**

Further analyses are reported here to include more household level heterogeneity, especially, we include income and education level into consideration. These two factors are often considered crucial issues that may affect individual behaviors against climate risks (Brouwer et al., 2007; Lee et al., 2015; Striessnig et al., 2013), which should potentially enable us to find more interesting results.

Table 4.1 – 4.4 reports regression results for consumption, income, savings, and investment decisions in risky financial assets for sub-samples in three quantiles of income (low/middle/high income). While the general main conclusions are consistent with the full sample results, there are visible differences in some categories. For example, climate variation affects high income household more than lower income quantiles. Income effect and risky investment effect are obviously more relevant to higher income quantiles, but saving decisions’ responses apply mainly on lower income quantiles. A potential explanation of such effects is that lower income households have less opportunity to hedge against climate risk and thus have to rely more on savings.

A very interesting phenomena is found in Table 4.5-4.7, which look at the sub-samples based on education level. Arguably, education level can raise awareness of the public towards climate change/variations (Lee et al., 2015). Following this logic, we would expect to see people with higher education more sensitive to climate variations in their economic decisions. This hypothesis is supported in all four dimensions and we do find strong evidence that higher educated people tend to be more sensitive to climate variations.

**Table 4.1. Consumption: quantile of Income**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Model** | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
| **Dependent variables** | Consum | Consum | Consum | N\_consum | N\_consum | N\_consum | U\_consum | U\_consum | U\_consum |
|  | (Low-inc) | (Middle-inc) | (High-inc) | (Low-inc) | (Middle-inc) | (High-inc) | (Low-inc) | (Middle-inc) | (High-inc) |
| **Temp\_std** | -0.036\*\*\* | -0.059\*\*\* | -0.077\*\*\* | -0.035\*\*\* | -0.044\*\*\* | -0.068\*\*\* | 0.000 | -0.015\*\* | -0.012 |
|  | (0.009) | (0.010) | (0.019) | (0.004) | (0.005) | (0.009) | (0.006) | (0.007) | (0.014) |
| **Income** | 0.148\*\*\* | 0.296\*\*\* | 0.236\*\*\* | 0.078\*\*\* | 0.182\*\*\* | 0.104\*\*\* | 0.062\*\* | 0.113\*\*\* | 0.126\*\*\* |
|  | (0.044) | (0.033) | (0.009) | (0.022) | (0.016) | (0.004) | (0.030) | (0.025) | (0.007) |
| **F\_size** | 0.281\*\*\* | 0.268\*\*\* | 0.393\*\*\* | 0.171\*\*\* | 0.204\*\*\* | 0.278\*\*\* | 0.092\*\*\* | 0.062\*\*\* | 0.089\*\*\* |
|  | (0.024) | (0.023) | (0.038) | (0.012) | (0.011) | (0.017) | (0.015) | (0.017) | (0.028) |
| **Age** | -0.034\*\*\* | -0.034\*\*\* | -0.052\*\*\* | -0.017\*\*\* | -0.015\*\*\* | -0.021\*\*\* | -0.017\*\*\* | -0.018\*\*\* | -0.031\*\*\* |
|  | (0.002) | (0.002) | (0.003) | (0.001) | (0.001) | (0.001) | (0.001) | (0.002) | (0.003) |
| **Employ** | -0.036 | -0.073\*\*\* | -0.132\*\*\* | -0.035\*\*\* | -0.120\*\*\* | -0.111\*\*\* | 0.005 | 0.044\*\* | -0.013 |
|  | (0.026) | (0.028) | (0.047) | (0.013) | (0.013) | (0.021) | (0.017) | (0.021) | (0.034) |
| **Marital** | 0.302\*\*\* | 0.270\*\*\* | 0.474\*\*\* | 0.177\*\*\* | 0.197\*\*\* | 0.237\*\*\* | 0.132\*\*\* | 0.081 | 0.274\*\*\* |
|  | (0.061) | (0.082) | (0.146) | (0.029) | (0.040) | (0.066) | (0.039) | (0.058) | (0.104) |
| **Education** | 0.454\*\*\* | 0.403\*\*\* | 0.792\*\*\* | 0.312\*\*\* | 0.258\*\*\* | 0.462\*\*\* | 0.117\*\* | 0.146\*\*\* | 0.322\*\*\* |
|  | (0.080) | (0.063) | (0.100) | (0.039) | (0.032) | (0.045) | (0.050) | (0.045) | (0.073) |
| **Health** | 0.171\*\*\* | 0.179\*\*\* | 0.228\* | 0.111\*\*\* | 0.102\*\*\* | 0.114\*\* | 0.054\* | 0.076\* | 0.074 |
|  | (0.047) | (0.060) | (0.123) | (0.023) | (0.028) | (0.053) | (0.032) | (0.044) | (0.092) |
| **Party** | 0.292\*\*\* | 0.182\*\* | 0.211\* | 0.170\*\*\* | 0.141\*\*\* | 0.055 | 0.111\* | 0.043 | 0.139\* |
|  | (0.097) | (0.076) | (0.108) | (0.045) | (0.041) | (0.047) | (0.065) | (0.052) | (0.080) |
| **Gender** | 0.056 | 0.071 | 0.065 | 0.034 | 0.023 | -0.019 | 0.021 | 0.048 | 0.106 |
|  | (0.050) | (0.054) | (0.089) | (0.024) | (0.025) | (0.039) | (0.034) | (0.040) | (0.066) |
| **Rural** | -0.626\*\*\* | -0.499\*\*\* | -0.479\*\*\* | -0.459\*\*\* | -0.508\*\*\* | -0.601\*\*\* | -0.158\*\*\* | 0.009 | 0.092 |
|  | (0.056) | (0.069) | (0.148) | (0.027) | (0.031) | (0.063) | (0.038) | (0.053) | (0.109) |
| **Hukou** | -0.306\*\* | 0.146 | 0.324\*\* | -0.208\*\*\* | 0.026 | 0.120\* | -0.079 | 0.113 | 0.238\*\* |
|  | (0.138) | (0.109) | (0.145) | (0.069) | (0.059) | (0.065) | (0.082) | (0.070) | (0.108) |
| **GDP\_city** | 0.486\*\*\* | 0.670\*\*\* | 0.943\*\*\* | 0.325\*\*\* | 0.451\*\*\* | 0.640\*\*\* | 0.163\*\*\* | 0.219\*\*\* | 0.324\*\*\* |
|  | (0.053) | (0.052) | (0.087) | (0.025) | (0.025) | (0.037) | (0.035) | (0.038) | (0.065) |
| **Structure** | -0.014\*\*\* | -0.008\*\*\* | -0.025\*\*\* | -0.010\*\*\* | -0.007\*\*\* | -0.015\*\*\* | -0.004\*\* | -0.001 | -0.011\*\*\* |
|  | (0.003) | (0.003) | (0.004) | (0.001) | (0.001) | (0.002) | (0.002) | (0.002) | (0.003) |
| **Constant** | -0.771 | -3.420\*\*\* | -4.751\*\*\* | -0.654\*\* | -2.424\*\*\* | -3.483\*\*\* | -0.121 | -1.001\*\* | -1.374\* |
|  | (0.550) | (0.565) | (0.967) | (0.256) | (0.265) | (0.421) | (0.372) | (0.413) | (0.720) |
| ***N*** | 8579 | 8579 | 8578 | 8579 | 8579 | 8578 | 8579 | 8579 | 8578 |
| **R2** | 0.183 | 0.130 | 0.274 | 0.268 | 0.232 | 0.338 | 0.069 | 0.040 | 0.143 |
| **F** | 110.547 | 78.212 | 173.589 | 178.506 | 175.062 | 262.770 | 45.085 | 26.474 | 66.578 |

*Note: robust standard errors are in brackets. \*, \*\* and \*\*\* denote significance levels at 10%, 5% and 1%, respectively.*

**Table 4.2. Income: quantile of Income**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Model** | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
| **Dependent variables** | Income | Income | Income | Wage income | Wage income | Wage income | Other income | Other income | Other income |
|  | (Low-inc) | (Middle-inc) | (High-inc) | (Low-inc) | (Middle-inc) | (High-inc) | (Low-inc) | (Middle-inc) | (High-inc) |
| **Temp\_std** | 0.012\*\*\* | -0.013\*\*\* | -0.215\*\*\* | -0.006\*\* | -0.038\*\*\* | -0.178\*\*\* | 0.018\*\*\* | 0.025\*\*\* | 0.006 |
|  | (0.002) | (0.004) | (0.035) | (0.003) | (0.007) | (0.025) | (0.003) | (0.007) | (0.032) |
| **F\_size** | -0.001 | 0.002 | 0.069 | -0.042\*\*\* | -0.142\*\*\* | -0.483\*\*\* | 0.037\*\*\* | 0.144\*\*\* | 0.548\*\*\* |
|  | (0.005) | (0.008) | (0.064) | (0.007) | (0.017) | (0.046) | (0.006) | (0.016) | (0.060) |
| **Age** | -0.002\*\*\* | 0.003\*\*\* | -0.064\*\*\* | -0.008\*\*\* | -0.034\*\*\* | -0.078\*\*\* | 0.007\*\*\* | 0.037\*\*\* | 0.022\*\*\* |
|  | (0.000) | (0.001) | (0.006) | (0.001) | (0.001) | (0.004) | (0.001) | (0.001) | (0.005) |
| **Employ** | 0.072\*\*\* | 0.104\*\*\* | 0.626\*\*\* | 0.115\*\*\* | 0.621\*\*\* | 2.253\*\*\* | -0.040\*\*\* | -0.517\*\*\* | -1.635\*\*\* |
|  | (0.006) | (0.009) | (0.079) | (0.008) | (0.020) | (0.055) | (0.007) | (0.019) | (0.075) |
| **Marital** | 0.053\*\*\* | 0.183\*\*\* | 0.386 | 0.015 | 0.043 | 0.706\*\*\* | 0.046\*\*\* | 0.139\*\*\* | -0.310 |
|  | (0.016) | (0.026) | (0.269) | (0.020) | (0.053) | (0.184) | (0.018) | (0.051) | (0.250) |
| **Education** | 0.127\*\*\* | 0.181\*\*\* | 1.441\*\*\* | 0.164\*\*\* | 0.396\*\*\* | 1.920\*\*\* | -0.024 | -0.214\*\*\* | -0.536\*\*\* |
|  | (0.018) | (0.021) | (0.176) | (0.029) | (0.043) | (0.118) | (0.022) | (0.041) | (0.165) |
| **Health** | 0.024\* | 0.029 | 0.273 | -0.001 | -0.111\*\* | 0.285\* | 0.028\* | 0.140\*\*\* | -0.035 |
|  | (0.013) | (0.022) | (0.214) | (0.015) | (0.045) | (0.150) | (0.014) | (0.043) | (0.196) |
| **Party** | 0.074\*\*\* | 0.118\*\*\* | 0.619\*\*\* | 0.023 | 0.053 | 1.197\*\*\* | 0.045\* | 0.062 | -0.562\*\*\* |
|  | (0.022) | (0.027) | (0.193) | (0.026) | (0.052) | (0.142) | (0.027) | (0.050) | (0.167) |
| **Gender** | 0.021\* | -0.014 | -0.443\*\*\* | 0.096\*\*\* | 0.121\*\*\* | 0.225\*\* | -0.071\*\*\* | -0.138\*\*\* | -0.620\*\*\* |
|  | (0.013) | (0.018) | (0.158) | (0.016) | (0.038) | (0.112) | (0.014) | (0.036) | (0.144) |
| **Rural** | -0.158\*\*\* | -0.208\*\*\* | -0.894\*\*\* | -0.197\*\*\* | -0.501\*\*\* | -1.650\*\*\* | 0.038\*\* | 0.292\*\*\* | 0.846\*\*\* |
|  | (0.014) | (0.023) | (0.221) | (0.016) | (0.051) | (0.168) | (0.015) | (0.048) | (0.225) |
| **Hukou** | 0.146\*\*\* | 0.016 | 0.076 | 0.030 | -0.114 | 0.721\*\*\* | 0.124\*\*\* | 0.129\* | -0.610\*\* |
|  | (0.030) | (0.033) | (0.288) | (0.039) | (0.077) | (0.204) | (0.032) | (0.071) | (0.270) |
| **GDP\_city** | 0.105\*\*\* | 0.155\*\*\* | 2.365\*\*\* | 0.032\*\* | -0.053 | 1.947\*\*\* | 0.077\*\*\* | 0.210\*\*\* | 0.148 |
|  | (0.011) | (0.016) | (0.149) | (0.014) | (0.034) | (0.104) | (0.013) | (0.033) | (0.139) |
| **Structure** | -0.002\*\*\* | -0.003\*\*\* | -0.062\*\*\* | 0.001 | 0.006\*\*\* | -0.049\*\*\* | -0.003\*\*\* | -0.010\*\*\* | -0.006 |
|  | (0.001) | (0.001) | (0.007) | (0.001) | (0.002) | (0.005) | (0.001) | (0.002) | (0.006) |
| **Constant** | -0.453\*\*\* | 1.358\*\*\* | -9.560\*\*\* | 0.391\*\* | 3.902\*\*\* | -12.479\*\*\* | -0.897\*\*\* | -2.564\*\*\* | 4.267\*\*\* |
|  | (0.124) | (0.183) | (1.678) | (0.152) | (0.388) | (1.165) | (0.138) | (0.370) | (1.582) |
| ***N*** | 8579 | 8579 | 8578 | 8579 | 8579 | 8578 | 8579 | 8579 | 8578 |
| **R2** | 0.069 | 0.051 | 0.092 | 0.096 | 0.245 | 0.274 | 0.050 | 0.246 | 0.075 |
| **F** | 52.569 | 36.090 | 57.622 | 73.616 | 275.749 | 260.399 | 36.178 | 250.764 | 66.017 |

*Note: robust standard errors are in brackets. \*, \*\* and \*\*\* denote significance levels at 10%, 5% and 1%, respectively.*

**Table 4.3. Saving: quantile of Income**

|  |  |  |  |
| --- | --- | --- | --- |
| **Model** | (1) | (2) | (3) |
| **Dependent variables** | Saving | Saving | Saving |
|  | (Low-inc) | (Middle-inc) | (High-inc) |
| **Temp\_std** | 1.281\*\*\* | 0.989\*\*\* | 0.404\* |
|  | (0.284) | (0.209) | (0.213) |
| **Income** | 46.750\*\*\* | 11.671\*\*\* | 1.561\*\*\* |
|  | (1.165) | (0.661) | (0.056) |
| **F\_size** | -9.218\*\*\* | -6.404\*\*\* | -3.485\*\*\* |
|  | (0.644) | (0.474) | (0.399) |
| **Age** | 1.125\*\*\* | 0.784\*\*\* | 0.534\*\*\* |
|  | (0.060) | (0.043) | (0.035) |
| **Employ** | 2.366\*\*\* | 3.858\*\*\* | 2.333\*\*\* |
|  | (0.777) | (0.553) | (0.482) |
| **Marital** | -11.300\*\*\* | -10.100\*\*\* | -4.709\*\*\* |
|  | (1.884) | (1.572) | (1.530) |
| **Education** | -13.196\*\*\* | -10.334\*\*\* | -6.765\*\*\* |
|  | (1.991) | (1.284) | (1.042) |
| **Health** | -6.570\*\*\* | -3.249\*\* | -1.365 |
|  | (1.633) | (1.359) | (1.405) |
| **Party** | -6.849\*\*\* | -5.072\*\*\* | -0.476 |
|  | (2.588) | (1.539) | (1.075) |
| **Gender** | -5.995\*\*\* | -1.765 | -1.037 |
|  | (1.513) | (1.095) | (0.956) |
| **Rural** | 22.819\*\*\* | 12.228\*\*\* | 8.254\*\*\* |
|  | (1.741) | (1.526) | (1.639) |
| **Hukou** | -2.632 | -3.355 | -3.898\*\*\* |
|  | (3.518) | (2.040) | (1.469) |
| **GDP\_city** | -14.485\*\*\* | -14.640\*\*\* | -6.698\*\*\* |
|  | (1.380) | (0.995) | (0.962) |
| **Structure** | 0.400\*\*\* | 0.222\*\*\* | 0.148\*\*\* |
|  | (0.076) | (0.056) | (0.043) |
| **Constant** | -2.032 | 95.666\*\*\* | 77.962\*\*\* |
|  | (14.842) | (11.198) | (10.953) |
| ***N*** | 7453 | 7452 | 7452 |
| **R2** | 0.234 | 0.185 | 0.125 |
| **F** | 179.103 | 125.504 | 82.875 |

*Note: robust standard errors are in brackets. \*, \*\* and \*\*\* denote significance levels at 10%, 5% and 1%, respectively.*

**Table 4.4 Risky financial assets investment: quantile of Income**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Model** | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
| **Dependent variables** | Risky | Risky | Risky | d\_risk | d\_risk | d\_risk | lnriskfinance | lnriskfinance | lnriskfinance |
|  | (Low-inc) | (Middle-inc) | (High-inc) | (Low-inc) | (Middle-inc) | (High-inc) | (Low-inc) | (Middle-inc) | (High-inc) |
| **Temp\_std** | -0.025 | -0.167\*\*\* | -0.583\*\*\* | -0.005 | -0.029\*\*\* | -0.036\*\*\* | -0.005 | -0.038\*\*\* | -0.109\*\*\* |
|  | (0.031) | (0.060) | (0.111) | (0.013) | (0.010) | (0.008) | (0.006) | (0.012) | (0.022) |
| **Income** | -0.062 | 0.524\*\* | 0.347\*\*\* | 0.077 | 0.105\*\*\* | 0.024\*\*\* | 0.016 | 0.144\*\*\* | 0.097\*\*\* |
|  | (0.184) | (0.205) | (0.042) | (0.056) | (0.028) | (0.002) | (0.033) | (0.036) | (0.007) |
| **F\_size** | -0.033 | -0.121 | -0.613\*\*\* | -0.016 | -0.013 | -0.047\*\*\* | -0.005 | -0.016 | -0.124\*\*\* |
|  | (0.059) | (0.107) | (0.166) | (0.031) | (0.022) | (0.016) | (0.011) | (0.025) | (0.040) |
| **Age** | -0.008 | -0.007 | 0.060\*\*\* | -0.008\*\*\* | -0.006\*\*\* | -0.001 | -0.002\* | -0.004\* | 0.004 |
|  | (0.006) | (0.011) | (0.019) | (0.003) | (0.002) | (0.001) | (0.001) | (0.002) | (0.004) |
| **Employ** | -0.199\*\*\* | -0.465\*\*\* | -0.578\*\*\* | -0.129\*\*\* | -0.115\*\*\* | -0.074\*\*\* | -0.045\*\*\* | -0.109\*\*\* | -0.149\*\*\* |
|  | (0.072) | (0.125) | (0.219) | (0.040) | (0.028) | (0.019) | (0.014) | (0.031) | (0.050) |
| **Marital** | 0.528\*\* | 0.767 | 3.114\*\*\* | 0.351\*\*\* | 0.148\*\* | 0.184\*\*\* | 0.143\*\*\* | 0.187\*\* | 0.579\*\*\* |
|  | (0.256) | (0.511) | (0.757) | (0.098) | (0.067) | (0.056) | (0.045) | (0.086) | (0.154) |
| **Education** | 2.642\*\*\* | 3.336\*\*\* | 6.516\*\*\* | 0.599\*\*\* | 0.451\*\*\* | 0.550\*\*\* | 0.540\*\*\* | 0.720\*\*\* | 1.517\*\*\* |
|  | (0.389) | (0.429) | (0.566) | (0.077) | (0.050) | (0.041) | (0.072) | (0.069) | (0.112) |
| **Health** | 0.153 | -0.037 | 1.728\*\*\* | 0.105 | 0.009 | 0.138\*\* | 0.062\*\* | 0.016 | 0.287\*\* |
|  | (0.188) | (0.370) | (0.647) | (0.087) | (0.062) | (0.056) | (0.031) | (0.073) | (0.144) |
| **Party** | 0.133 | 1.115\* | 1.587\*\* | 0.144 | 0.184\*\*\* | 0.147\*\*\* | 0.054 | 0.257\*\*\* | 0.421\*\*\* |
|  | (0.399) | (0.589) | (0.703) | (0.114) | (0.061) | (0.041) | (0.076) | (0.088) | (0.120) |
| **Gender** | 0.457\*\* | 0.345 | 1.564\*\*\* | 0.134\* | 0.064 | 0.095\*\*\* | 0.074\*\* | 0.110\* | 0.283\*\*\* |
|  | (0.199) | (0.324) | (0.521) | (0.072) | (0.047) | (0.035) | (0.036) | (0.060) | (0.098) |
| **Rural** | -0.742\*\*\* | -2.003\*\*\* | -2.921\*\*\* | -0.440\*\*\* | -0.625\*\*\* | -0.714\*\*\* | -0.153\*\*\* | -0.405\*\*\* | -0.732\*\*\* |
|  | (0.140) | (0.265) | (0.500) | (0.098) | (0.087) | (0.090) | (0.026) | (0.077) | (0.162) |
| **Hukou** | 0.805\* | 2.141\*\*\* | 4.497\*\*\* | 0.148 | 0.250\*\*\* | 0.379\*\*\* | 0.091 | 0.407\*\*\* | 1.128\*\*\* |
|  | (0.482) | (0.550) | (0.785) | (0.117) | (0.084) | (0.058) | (0.096) | (0.107) | (0.157) |
| **GDP\_city** | 0.943\*\*\* | 1.718\*\*\* | 5.209\*\*\* | 0.352\*\*\* | 0.276\*\*\* | 0.397\*\*\* | 0.190\*\*\* | 0.399\*\*\* | 1.125\*\*\* |
|  | (0.204) | (0.290) | (0.443) | (0.067) | (0.045) | (0.037) | (0.036) | (0.054) | (0.094) |
| **Structure** | -0.022\*\* | -0.052\*\*\* | -0.134\*\*\* | -0.002 | -0.005\*\* | -0.007\*\*\* | -0.004\* | -0.010\*\*\* | -0.032\*\*\* |
|  | (0.010) | (0.017) | (0.024) | (0.003) | (0.002) | (0.002) | (0.002) | (0.003) | (0.004) |
| **Constant** | -7.975\*\*\* | -14.071\*\*\* | -49.965\*\*\* | -5.558\*\*\* | -4.217\*\*\* | -5.288\*\*\* | -1.607\*\*\* | -3.331\*\*\* | -10.358\*\*\* |
|  | (2.013) | (3.048) | (4.971) | (0.751) | (0.511) | (0.422) | (0.358) | (0.605) | (1.086) |
| ***Margins(Temp\_std)*** |  |  |  |  | -0.004\*\*\* | -0.009\*\*\* |  |  |  |
| ***N*** | 7842 | 7842 | 7841 | 7842 | 7842 | 7841 | 7842 | 7842 | 7841 |
| **R2/Pseudo R2** | 0.036 | 0.045 | 0.102 | 0.170 | 0.121 | 0.148 | 0.045 | 0.062 | 0.150 |
| **F/** **Wald** | 8.553 | 25.557 | 76.912 | 253.72 | 367.18 | 943.43 | 11.046 | 36.997 | 98.973 |

*Note: robust standard errors are in brackets. \*, \*\* and \*\*\* denote significance levels at 10%, 5% and 1%, respectively.*

**Table 4.5. Consumption: Educational level**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Model** | (1) | (2) | (3) | (4) | (5) | (6) |
| **Dependent variables** | Consum | Consum | N\_consum | N\_consum | U\_consum | U\_consum |
|  | (Lower than high) | (high and above) | (Lower than high) | (high and above) | (Lower than high) | (high and above) |
| **Temp\_std** | -0.043\*\*\* | -0.078\*\*\* | -0.040\*\*\* | -0.063\*\*\* | -0.004 | -0.015 |
|  | (0.008) | (0.015) | (0.004) | (0.007) | (0.006) | (0.011) |
| **Income** | 0.215\*\*\* | 0.266\*\*\* | 0.113\*\*\* | 0.121\*\*\* | 0.098\*\*\* | 0.139\*\*\* |
|  | (0.011) | (0.009) | (0.005) | (0.004) | (0.008) | (0.007) |
| **F\_size** | 0.322\*\*\* | 0.300\*\*\* | 0.213\*\*\* | 0.241\*\*\* | 0.095\*\*\* | 0.042 |
|  | (0.019) | (0.036) | (0.008) | (0.017) | (0.013) | (0.026) |
| **Age** | -0.037\*\*\* | -0.043\*\*\* | -0.017\*\*\* | -0.017\*\*\* | -0.020\*\*\* | -0.027\*\*\* |
|  | (0.002) | (0.003) | (0.001) | (0.001) | (0.001) | (0.002) |
| **Employ** | -0.091\*\*\* | -0.022 | -0.094\*\*\* | -0.031 | 0.008 | 0.010 |
|  | (0.022) | (0.045) | (0.010) | (0.021) | (0.016) | (0.031) |
| **Marital** | 0.110\* | 0.686\*\*\* | 0.093\*\*\* | 0.375\*\*\* | 0.031 | 0.343\*\*\* |
|  | (0.058) | (0.106) | (0.028) | (0.048) | (0.040) | (0.075) |
| **Health** | 0.233\*\*\* | 0.112 | 0.139\*\*\* | 0.086\* | 0.088\*\*\* | 0.004 |
|  | (0.040) | (0.105) | (0.019) | (0.047) | (0.030) | (0.077) |
| **Party** | 0.206\*\*\* | 0.255\*\*\* | 0.170\*\*\* | 0.113\*\*\* | 0.043 | 0.129\*\* |
|  | (0.070) | (0.087) | (0.035) | (0.038) | (0.050) | (0.063) |
| **Gender** | 0.005 | 0.145\* | -0.002 | 0.038 | 0.017 | 0.114\*\* |
|  | (0.042) | (0.076) | (0.019) | (0.034) | (0.031) | (0.055) |
| **Rural** | -0.566\*\*\* | -0.687\*\*\* | -0.510\*\*\* | -0.707\*\*\* | -0.063\* | 0.016 |
|  | (0.048) | (0.126) | (0.022) | (0.058) | (0.036) | (0.089) |
| **Hukou** | -0.051 | 0.250\*\* | -0.082\* | 0.085 | 0.046 | 0.188\*\* |
|  | (0.098) | (0.125) | (0.047) | (0.060) | (0.069) | (0.088) |
| **GDP\_city** | 0.560\*\*\* | 1.017\*\*\* | 0.427\*\*\* | 0.650\*\*\* | 0.143\*\*\* | 0.380\*\*\* |
|  | (0.042) | (0.070) | (0.019) | (0.032) | (0.030) | (0.050) |
| **Structure** | -0.015\*\*\* | -0.019\*\*\* | -0.012\*\*\* | -0.012\*\*\* | -0.003\* | -0.008\*\*\* |
|  | (0.002) | (0.004) | (0.001) | (0.002) | (0.002) | (0.003) |
| **Constant** | -1.432\*\*\* | -5.766\*\*\* | -1.570\*\*\* | -3.892\*\*\* | 0.058 | -1.945\*\*\* |
|  | (0.435) | (0.755) | (0.198) | (0.346) | (0.318) | (0.539) |
| ***N*** | 16157 | 9579 | 16157 | 9579 | 16157 | 9579 |
| **R2** | 0.245 | 0.334 | 0.363 | 0.379 | 0.089 | 0.191 |
| **F** | 248.730 | 241.494 | 469.520 | 333.429 | 78.626 | 91.861 |

*Note: robust standard errors are in brackets. \*, \*\* and \*\*\* denote significance levels at 10%, 5% and 1%, respectively.*

**Table 4.6. Income and Saving: Educational level**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Model** | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| **Dependent variables** | Income | Income | Wage income | Wage income | Other income | Other income | Saving | Saving |
|  | (Lower than high) | (high and above) | (Lower than high) | (high and above) | (Lower than high) | (high and above) | (Lower than high) | (high and above) |
| **Temp\_std** | -0.065\*\*\* | -0.208\*\*\* | -0.069\*\*\* | -0.113\*\*\* | 0.009 | -0.067\*\*\* | 0.777\*\*\* | 0.257 |
|  | (0.012) | (0.028) | (0.008) | (0.020) | (0.010) | (0.022) | (0.210) | (0.239) |
| **Income** | 0.055\*\* | 0.092 | -0.094\*\*\* | -0.474\*\*\* | 0.157\*\*\* | 0.530\*\*\* | 5.760\*\*\* | 3.130\*\*\* |
|  | (0.025) | (0.072) | (0.019) | (0.049) | (0.021) | (0.056) | (0.187) | (0.079) |
| **F\_size** |  |  |  |  |  |  | -6.119\*\*\* | -3.999\*\*\* |
|  |  |  |  |  |  |  | (0.411) | (0.534) |
| **Age** | -0.003 | -0.021\*\*\* | -0.011\*\*\* | -0.072\*\*\* | 0.010\*\*\* | 0.054\*\*\* | 0.807\*\*\* | 0.757\*\*\* |
|  | (0.003) | (0.005) | (0.002) | (0.004) | (0.002) | (0.004) | (0.043) | (0.043) |
| **Employ** | 0.765\*\*\* | 1.784\*\*\* | 1.013\*\*\* | 2.318\*\*\* | -0.253\*\*\* | -0.609\*\*\* | 8.332\*\*\* | 6.747\*\*\* |
|  | (0.029) | (0.084) | (0.023) | (0.058) | (0.024) | (0.068) | (0.485) | (0.667) |
| **Marital** | 0.521\*\*\* | 1.344\*\*\* | -0.058 | 1.568\*\*\* | 0.588\*\*\* | -0.272\* | 1.049 | -5.821\*\*\* |
|  | (0.086) | (0.201) | (0.057) | (0.135) | (0.067) | (0.161) | (1.598) | (1.631) |
| **Health** | 0.430\*\*\* | 0.783\*\*\* | 0.095\*\* | 0.584\*\*\* | 0.324\*\*\* | 0.170 | 0.164 | -0.689 |
|  | (0.061) | (0.187) | (0.042) | (0.128) | (0.051) | (0.144) | (1.227) | (1.754) |
| **Party** | 1.146\*\*\* | 1.444\*\*\* | 0.336\*\*\* | 1.522\*\*\* | 0.772\*\*\* | -0.100 | -0.043 | 3.406\*\*\* |
|  | (0.132) | (0.156) | (0.084) | (0.116) | (0.111) | (0.117) | (1.701) | (1.215) |
| **Gender** | 0.012 | -0.278\* | 0.286\*\*\* | -0.044 | -0.247\*\*\* | -0.228\*\* | 0.891 | -4.020\*\*\* |
|  | (0.064) | (0.146) | (0.043) | (0.102) | (0.053) | (0.115) | (1.056) | (1.136) |
| **Rural** | -1.553\*\*\* | -3.467\*\*\* | -1.041\*\*\* | -3.103\*\*\* | -0.466\*\*\* | -0.223 | 0.731 | -1.648 |
|  | (0.067) | (0.201) | (0.047) | (0.149) | (0.056) | (0.163) | (1.252) | (2.419) |
| **Hukou** | -0.156 | 0.177 | -0.353\*\*\* | 0.759\*\*\* | 0.231 | -0.553\*\*\* | -1.537 | -4.887\*\*\* |
|  | (0.167) | (0.265) | (0.109) | (0.184) | (0.143) | (0.212) | (2.093) | (1.800) |
| **GDP\_city** | 1.504\*\*\* | 3.562\*\*\* | 0.673\*\*\* | 2.287\*\*\* | 0.786\*\*\* | 0.998\*\*\* | -3.369\*\*\* | -2.689\*\* |
|  | (0.056) | (0.127) | (0.039) | (0.088) | (0.047) | (0.097) | (0.964) | (1.083) |
| **Structure** | -0.032\*\*\* | -0.090\*\*\* | -0.007\*\*\* | -0.062\*\*\* | -0.025\*\*\* | -0.018\*\*\* | 0.062 | 0.140\*\*\* |
|  | (0.003) | (0.006) | (0.002) | (0.005) | (0.002) | (0.005) | (0.053) | (0.051) |
| **Constant** | -11.382\*\*\* | -28.390\*\*\* | -4.505\*\*\* | -17.133\*\*\* | -6.688\*\*\* | -9.184\*\*\* | -31.013\*\*\* | -13.168 |
|  | (0.592) | (1.348) | (0.423) | (0.946) | (0.492) | (1.054) | (10.611) | (12.201) |
| ***N*** | 16157 | 9579 | 16157 | 9579 | 16157 | 9579 | 13579 | 8778 |
| **R2** | 0.143 | 0.181 | 0.205 | 0.298 | 0.069 | 0.057 | 0.186 | 0.196 |
| **F** | 202.699 | 154.856 | 253.523 | 306.939 | 100.200 | 56.326 | 149.810 | 161.988 |

*Note: robust standard errors are in brackets. \*, \*\* and \*\*\* denote significance levels at 10%, 5% and 1%, respectively.*

**Table 4.7. Risky financial assets investment: Educational level**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Model** | (1) | (2) | (3) | (4) | (5) | (6) |
| **Dependent variables** | Risky | Risky | d\_risk | d\_risk | lnriskfinance | lnriskfinance |
|  | (Lower than high) | (high and above) | (Lower than high) | (high and above) | (Lower than high) | (high and above) |
| **Temp\_std** | -0.094\*\*\* | -0.505\*\*\* | -0.022\*\* | -0.036\*\*\* | -0.019\*\*\* | -0.098\*\*\* |
|  | (0.029) | (0.097) | (0.009) | (0.007) | (0.006) | (0.019) |
| **Income** | 0.303\*\*\* | 0.522\*\*\* | 0.044\*\*\* | 0.036\*\*\* | 0.077\*\*\* | 0.144\*\*\* |
|  | (0.035) | (0.043) | (0.003) | (0.002) | (0.008) | (0.007) |
| **F\_size** | -0.051 | -0.420\*\* | -0.017 | -0.038\*\* | -0.008 | -0.074\* |
|  | (0.054) | (0.197) | (0.018) | (0.016) | (0.011) | (0.043) |
| **Age** | 0.001 | 0.058\*\*\* | -0.006\*\*\* | 0.001 | -0.002\* | 0.005 |
|  | (0.006) | (0.018) | (0.002) | (0.001) | (0.001) | (0.004) |
| **Employ** | -0.542\*\*\* | -0.133 | -0.116\*\*\* | -0.004 | -0.121\*\*\* | -0.064 |
|  | (0.070) | (0.247) | (0.022) | (0.020) | (0.014) | (0.054) |
| **Marital** | 0.751\*\*\* | 2.781\*\*\* | 0.190\*\*\* | 0.245\*\*\* | 0.148\*\*\* | 0.632\*\*\* |
|  | (0.258) | (0.624) | (0.066) | (0.047) | (0.048) | (0.128) |
| **Health** | 0.483\*\*\* | 1.033 | 0.143\*\*\* | 0.079 | 0.102\*\*\* | 0.233\* |
|  | (0.168) | (0.669) | (0.055) | (0.051) | (0.032) | (0.135) |
| **Party** | 0.734\* | 1.984\*\*\* | 0.235\*\*\* | 0.187\*\*\* | 0.174\*\* | 0.498\*\*\* |
|  | (0.417) | (0.586) | (0.066) | (0.036) | (0.076) | (0.104) |
| **Gender** | 0.224 | 1.803\*\*\* | 0.073\* | 0.108\*\*\* | 0.049 | 0.338\*\*\* |
|  | (0.181) | (0.498) | (0.043) | (0.033) | (0.034) | (0.092) |
| **Rural** | -1.195\*\*\* | -5.370\*\*\* | -0.545\*\*\* | -0.955\*\*\* | -0.252\*\*\* | -1.210\*\*\* |
|  | (0.142) | (0.519) | (0.060) | (0.100) | (0.027) | (0.170) |
| **Hukou** | 1.499\*\*\* | 4.194\*\*\* | 0.284\*\*\* | 0.335\*\*\* | 0.290\*\*\* | 0.984\*\*\* |
|  | (0.373) | (0.719) | (0.078) | (0.053) | (0.077) | (0.145) |
| **GDP\_city** | 1.656\*\*\* | 4.915\*\*\* | 0.460\*\*\* | 0.364\*\*\* | 0.364\*\*\* | 1.077\*\*\* |
|  | (0.170) | (0.416) | (0.042) | (0.032) | (0.031) | (0.085) |
| **Structure** | -0.056\*\*\* | -0.125\*\*\* | -0.006\*\*\* | -0.008\*\*\* | -0.011\*\*\* | -0.029\*\*\* |
|  | (0.011) | (0.022) | (0.002) | (0.001) | (0.002) | (0.004) |
| **Constant** | -13.609\*\*\* | -44.292\*\*\* | -6.152\*\*\* | -4.783\*\*\* | -2.921\*\*\* | -9.480\*\*\* |
|  | (1.671) | (4.599) | (0.475) | (0.363) | (0.314) | (0.963) |
| ***Margins(Temp\_std)*** |  |  | -0.002\*\* | -0.009\*\*\* |  |  |
| ***N*** | 14819 | 8706 | 14819 | 8706 | 14819 | 8706 |
| **R2/Pseudo R2** | 0.048 | 0.087 | 0.162 | 0.115 | 0.070 | 0.136 |
| **F/** **Wald** | 27.836 | 75.467 | 14,819 | 1067.44 | 39.093 | 105.021 |

*Note: robust standard errors are in brackets. \*, \*\* and \*\*\* denote significance levels at 10%, 5% and 1%, respectively.*

**5. Supplementary tables: further analysis on the impacts over risky assets**

To provide further robustness analysis on risky asset investment, we introduce four additional variables. They are whether to invest in risky financial assets (*d\_risk*); whether to invest in stock markets (*d\_stock*); ratio of holding common stocks over all financial assets (*stock\_ratio*); and natural logarithm of total value of risky financial assets (*lnriskfinance*). Table 5.1 and 5.2 confirm the main findings that climate variation can have clear negative impacts on households’ investment decision in risky assets.

To control for the impact of households working in financial sector, we exclude these families and redo the regression in Table 5.3 and the results are consistent.

**Table 5.1. Baseline regression results**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Model** | (1) | (2) | (3) | (4) |
| **Dependent variables** | d\_risk | d\_stock | stock\_ratio | lnriskfinance |
| **Temp\_std** | -0.030\*\*\* | -0.048\*\*\* | -0.173\*\*\* | -0.046\*\*\* |
|  | (0.006) | (0.007) | (0.023) | (0.007) |
| **Income** | 0.038\*\*\* | 0.030\*\*\* | 0.181\*\*\* | 0.128\*\*\* |
|  | (0.002) | (0.002) | (0.018) | (0.006) |
| **F\_size** | -0.027\*\* | -0.013 | -0.051 | -0.036\*\*\* |
|  | (0.012) | (0.013) | (0.040) | (0.014) |
| **Age** | -0.002\*\* | -0.001 | 0.009\*\* | 0.000 |
|  | (0.001) | (0.001) | (0.004) | (0.001) |
| **Employ** | -0.059\*\*\* | -0.067\*\*\* | -0.272\*\*\* | -0.125\*\*\* |
|  | (0.014) | (0.016) | (0.049) | (0.017) |
| **Marital** | 0.252\*\*\* | 0.233\*\*\* | 0.731\*\*\* | 0.384\*\*\* |
|  | (0.038) | (0.045) | (0.176) | (0.055) |
| **Education** | 0.580\*\*\* | 0.604\*\*\* | 2.328\*\*\* | 1.061\*\*\* |
|  | (0.029) | (0.034) | (0.168) | (0.053) |
| **Health** | 0.112\*\*\* | 0.110\*\* | 0.128 | 0.106\*\*\* |
|  | (0.037) | (0.044) | (0.132) | (0.041) |
| **Party** | 0.201\*\*\* | 0.105\*\*\* | 0.063 | 0.374\*\*\* |
|  | (0.032) | (0.037) | (0.225) | (0.073) |
| **Gender** | 0.095\*\*\* | 0.039 | 0.065 | 0.186\*\*\* |
|  | (0.026) | (0.030) | (0.130) | (0.041) |
| **Rural** | -0.697\*\*\* | -0.981\*\*\* | -0.818\*\*\* | -0.311\*\*\* |
|  | (0.052) | (0.091) | (0.089) | (0.032) |
| **Hukou** | 0.315\*\*\* | 0.327\*\*\* | 1.431\*\*\* | 0.668\*\*\* |
|  | (0.045) | (0.052) | (0.238) | (0.078) |
| **GDP\_city** | 0.400\*\*\* | 0.459\*\*\* | 1.492\*\*\* | 0.631\*\*\* |
|  | (0.025) | (0.031) | (0.108) | (0.036) |
| **Structure** | -0.007\*\*\* | -0.005\*\*\* | -0.030\*\*\* | -0.021\*\*\* |
|  | (0.001) | (0.001) | (0.006) | (0.002) |
| **Constant** | -5.693\*\*\* | -6.578\*\*\* | -13.708\*\*\* | -5.744\*\*\* |
|  | (0.288) | (0.347) | (1.134) | (0.373) |
| ***Margins(Temp\_std)*** | -0.004\*\*\* | -0.005\*\*\* |  |  |
| ***N*** | 23525 | 23525 | 23525 | 23525 |
| **R2/Pseudo R2** | 0.227 | 0.223 | 0.066 | 0.174 |
| **F/** **Wald** | 2522.45 | 1587.61 | 80.884 | 213.659 |

*Note: robust standard errors are in brackets. \*, \*\* and \*\*\* denote significance levels at 10%, 5% and 1%, respectively.*

**Table 5.2. Robustness check using extreme days as a measure of climate**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Model** | (1) | (2) | (3) | (4) |
| **Dependent variables** | d\_risk | d\_stock | stock\_ratio | lnriskfinance |
| **Temp\_extre** | -0.018 | -0.010 | -0.079\*\*\* | -0.041\*\*\* |
|  | (0.014) | (0.020) | (0.021) | (0.008) |
| **Income** | 0.039\*\*\* | 0.031\*\*\* | 0.184\*\*\* | 0.129\*\*\* |
|  | (0.002) | (0.002) | (0.018) | (0.006) |
| **F\_size** | -0.022\* | -0.004 | -0.029 | -0.030\*\* |
|  | (0.012) | (0.013) | (0.040) | (0.014) |
| **Age** | -0.002\*\* | -0.001 | 0.010\*\* | 0.000 |
|  | (0.001) | (0.001) | (0.004) | (0.001) |
| **Employ** | -0.057\*\*\* | -0.063\*\*\* | -0.249\*\*\* | -0.120\*\*\* |
|  | (0.014) | (0.016) | (0.049) | (0.017) |
| **Marital** | 0.245\*\*\* | 0.221\*\*\* | 0.685\*\*\* | 0.373\*\*\* |
|  | (0.038) | (0.045) | (0.176) | (0.055) |
| **Education** | 0.578\*\*\* | 0.599\*\*\* | 2.318\*\*\* | 1.058\*\*\* |
|  | (0.029) | (0.034) | (0.169) | (0.053) |
| **Health** | 0.116\*\*\* | 0.116\*\*\* | 0.149 | 0.110\*\*\* |
|  | (0.037) | (0.044) | (0.132) | (0.041) |
| **Party** | 0.194\*\*\* | 0.092\*\* | 0.029 | 0.364\*\*\* |
|  | (0.032) | (0.037) | (0.226) | (0.073) |
| **Gender** | 0.087\*\*\* | 0.026 | 0.013 | 0.172\*\*\* |
|  | (0.026) | (0.030) | (0.130) | (0.041) |
| **Rural** | -0.694\*\*\* | -0.969\*\*\* | -0.805\*\*\* | -0.308\*\*\* |
|  | (0.052) | (0.090) | (0.089) | (0.032) |
| **Hukou** | 0.303\*\*\* | 0.307\*\*\* | 1.356\*\*\* | 0.650\*\*\* |
|  | (0.045) | (0.052) | (0.237) | (0.078) |
| **GDP\_city** | 0.378\*\*\* | 0.429\*\*\* | 1.388\*\*\* | 0.598\*\*\* |
|  | (0.025) | (0.030) | (0.106) | (0.035) |
| **Structure** | -0.007\*\*\* | -0.004\*\*\* | -0.031\*\*\* | -0.021\*\*\* |
|  | (0.001) | (0.001) | (0.006) | (0.002) |
| **Constant** | -5.748\*\*\* | -6.716\*\*\* | -14.205\*\*\* | -5.798\*\*\* |
|  | (0.294) | (0.353) | (1.140) | (0.374) |
| ***N*** | 23525 | 23525 | 23525 | 23525 |
| **R2/Pseudo R2** | 0.225 | 0.219 | 0.064 | 0.173 |
| **F/** **Wald** | 2531.69 | 1578.23 | 80.797 | 212.761 |

*Note: robust standard errors are in brackets. \*, \*\* and \*\*\* denote significance levels at 10%, 5% and 1%, respectively.*

**Table 5.3. Robust Check: after drop of households in financial sector**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Model** | (1) | (2) | (3) | (4) | (5) |
| **Dependent variables** | Risky | d\_risk | lnriskfinance | d\_stock | stock\_ratio |
| **Temp\_std** | -0.209\*\*\* | -0.029\*\*\* | -0.042\*\*\* | -0.047\*\*\* | -0.157\*\*\* |
|  | (0.039) | (0.006) | (0.007) | (0.007) | (0.022) |
| **Income** | 0.441\*\*\* | 0.038\*\*\* | 0.121\*\*\* | 0.030\*\*\* | 0.156\*\*\* |
|  | (0.031) | (0.002) | (0.006) | (0.002) | (0.018) |
| **F\_size** | -0.136\*\* | -0.022\* | -0.026\* | -0.007 | -0.032 |
|  | (0.068) | (0.012) | (0.013) | (0.014) | (0.039) |
| **Age** | 0.025\*\*\* | -0.002\* | 0.001 | -0.001 | 0.011\*\*\* |
|  | (0.007) | (0.001) | (0.001) | (0.001) | (0.004) |
| **Employ** | -0.544\*\*\* | -0.066\*\*\* | -0.129\*\*\* | -0.074\*\*\* | -0.265\*\*\* |
|  | (0.083) | (0.014) | (0.017) | (0.016) | (0.048) |
| **Marital** | 1.846\*\*\* | 0.262\*\*\* | 0.385\*\*\* | 0.228\*\*\* | 0.689\*\*\* |
|  | (0.281) | (0.039) | (0.054) | (0.046) | (0.174) |
| **Education** | 4.466\*\*\* | 0.561\*\*\* | 1.015\*\*\* | 0.578\*\*\* | 2.163\*\*\* |
|  | (0.279) | (0.029) | (0.053) | (0.035) | (0.167) |
| **Health** | 0.560\*\*\* | 0.116\*\*\* | 0.115\*\*\* | 0.111\*\* | 0.175 |
|  | (0.212) | (0.037) | (0.040) | (0.045) | (0.127) |
| **Party** | 1.364\*\*\* | 0.195\*\*\* | 0.343\*\*\* | 0.112\*\*\* | 0.145 |
|  | (0.387) | (0.033) | (0.073) | (0.038) | (0.225) |
| **Gender** | 0.810\*\*\* | 0.093\*\*\* | 0.176\*\*\* | 0.035 | 0.037 |
|  | (0.214) | (0.026) | (0.041) | (0.031) | (0.128) |
| **Rural** | -1.436\*\*\* | -0.684\*\*\* | -0.300\*\*\* | -0.985\*\*\* | -0.814\*\*\* |
|  | (0.164) | (0.052) | (0.032) | (0.093) | (0.087) |
| **Hukou** | 2.813\*\*\* | 0.312\*\*\* | 0.636\*\*\* | 0.329\*\*\* | 1.331\*\*\* |
|  | (0.387) | (0.046) | (0.077) | (0.053) | (0.234) |
| **GDP\_city** | 2.886\*\*\* | 0.410\*\*\* | 0.635\*\*\* | 0.473\*\*\* | 1.486\*\*\* |
|  | (0.182) | (0.026) | (0.035) | (0.032) | (0.106) |
| **Structure** | -0.101\*\*\* | -0.008\*\*\* | -0.022\*\*\* | -0.005\*\*\* | -0.032\*\*\* |
|  | (0.011) | (0.001) | (0.002) | (0.001) | (0.006) |
| **Constant** | -26.996\*\*\* | -5.808\*\*\* | -5.803\*\*\* | -6.706\*\*\* | -13.696\*\*\* |
|  | (1.895) | (0.295) | (0.368) | (0.359) | (1.114) |
| ***Margins(Temp\_std)*** |  | -0.004\*\*\* |  | -0.005\*\*\* |  |
| ***N*** | 23107 | 23107 | 23107 | 23107 | 23107 |
| **R2/Pseudo R2** | 0.109 | 0.222 | 0.165 | 0.219 | 0.060 |
| **F/** **Wald** | 124.590 | 2336.52 | 193.026 | 1443.59 | 73.560 |

*Note: robust standard errors are in brackets. \*, \*\* and \*\*\* denote significance levels at 10%, 5% and 1%, respectively.*

**6. Supplementary tables: short term variations**

In our main analysis, the climate impacts are analyzed using long-term historical temperature variations to reflect the cultural effects and results are generally persistent over different specifications. It is also worth to see how households in China react to short-term climate variations. To examine this, we analyze the climate effects on household economic decisions using the same year variations.

In table 6.1, we use city level temperature variations in 2012 to represent short-term climate variations across regions in China. The results are generally consistent with the long-term effects, though the numbers are smaller except the effects on investment in risky assets. The higher sensitivity to climate variations reflects that the investment decisions on risky financial assets are often affected by most recent factors, even if there is a long-term trend.

**Table 6.1. Temperature variations across cities in 2012**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Model** | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| **Dependent variables** | Consum | N\_consum | U\_consum | Income | Wage income | Other income | Saving | Risky |
| **Temp\_std2012** | -0.033\*\*\* | -0.030\*\*\* | -0.003 | -0.074\*\*\* | -0.061\*\*\* | -0.006 | 0.354\*\*\* | -0.184\*\*\* |
|  | (0.004) | (0.002) | (0.003) | (0.007) | (0.005) | (0.006) | (0.088) | (0.023) |
| **Income** | 0.257\*\*\* | 0.122\*\*\* | 0.130\*\*\* |  |  |  | 3.887\*\*\* | 0.483\*\*\* |
|  | (0.007) | (0.003) | (0.005) |  |  |  | (0.078) | (0.032) |
| **F\_size** | 0.320\*\*\* | 0.227\*\*\* | 0.078\*\*\* | 0.046 | -0.253\*\*\* | 0.295\*\*\* | -5.333\*\*\* | -0.188\*\* |
|  | (0.018) | (0.008) | (0.013) | (0.030) | (0.022) | (0.024) | (0.351) | (0.078) |
| **Age** | -0.040\*\*\* | -0.017\*\*\* | -0.023\*\*\* | -0.016\*\*\* | -0.041\*\*\* | 0.028\*\*\* | 0.781\*\*\* | 0.027\*\*\* |
|  | (0.002) | (0.001) | (0.001) | (0.003) | (0.002) | (0.002) | (0.031) | (0.008) |
| **Employ** | -0.100\*\*\* | -0.088\*\*\* | -0.008 | 1.105\*\*\* | 1.460\*\*\* | -0.384\*\*\* | 8.410\*\*\* | -0.489\*\*\* |
|  | (0.021) | (0.010) | (0.015) | (0.035) | (0.026) | (0.028) | (0.417) | (0.094) |
| **Marital** | 0.322\*\*\* | 0.225\*\*\* | 0.117\*\*\* | 0.748\*\*\* | 0.292\*\*\* | 0.449\*\*\* | -2.126\* | 1.913\*\*\* |
|  | (0.056) | (0.026) | (0.039) | (0.101) | (0.069) | (0.080) | (1.175) | (0.310) |
| **Education** | 0.603\*\*\* | 0.388\*\*\* | 0.212\*\*\* | 2.356\*\*\* | 1.819\*\*\* | 0.449\*\*\* | -1.450 | 4.905\*\*\* |
|  | (0.050) | (0.023) | (0.036) | (0.089) | (0.059) | (0.072) | (0.931) | (0.303) |
| **Health** | 0.187\*\*\* | 0.119\*\*\* | 0.054\* | 0.449\*\*\* | 0.146\*\*\* | 0.293\*\*\* | 0.601 | 0.599\*\* |
|  | (0.043) | (0.020) | (0.031) | (0.074) | (0.051) | (0.058) | (1.082) | (0.237) |
| **Party** | 0.207\*\*\* | 0.111\*\*\* | 0.087\* | 1.369\*\*\* | 1.072\*\*\* | 0.268\*\*\* | 2.734\*\*\* | 1.444\*\*\* |
|  | (0.063) | (0.029) | (0.046) | (0.118) | (0.088) | (0.090) | (1.040) | (0.422) |
| **Gender** | 0.083\*\* | 0.019 | 0.072\*\* | -0.107 | 0.176\*\*\* | -0.269\*\*\* | -1.646\*\* | 0.875\*\*\* |
|  | (0.041) | (0.019) | (0.030) | (0.074) | (0.052) | (0.059) | (0.825) | (0.238) |
| **Rural** | -0.472\*\*\* | -0.530\*\*\* | 0.049 | -1.900\*\*\* | -1.476\*\*\* | -0.373\*\*\* | -2.026\* | -1.661\*\*\* |
|  | (0.048) | (0.022) | (0.035) | (0.074) | (0.053) | (0.060) | (1.168) | (0.186) |
| **Hukou** | 0.156\* | 0.040 | 0.130\*\* | 0.251 | 0.381\*\*\* | -0.124 | -3.979\*\*\* | 3.272\*\*\* |
|  | (0.081) | (0.039) | (0.057) | (0.163) | (0.112) | (0.131) | (1.416) | (0.410) |
| **GDP\_city** | 0.769\*\*\* | 0.525\*\*\* | 0.251\*\*\* | 2.335\*\*\* | 1.378\*\*\* | 0.807\*\*\* | -4.173\*\*\* | 2.988\*\*\* |
|  | (0.039) | (0.018) | (0.028) | (0.066) | (0.046) | (0.051) | (0.773) | (0.200) |
| **Structure** | -0.019\*\*\* | -0.013\*\*\* | -0.006\*\*\* | -0.068\*\*\* | -0.039\*\*\* | -0.024\*\*\* | 0.092\*\* | -0.104\*\*\* |
|  | (0.002) | (0.001) | (0.002) | (0.004) | (0.003) | (0.003) | (0.041) | (0.012) |
| **Constant** | -3.587\*\*\* | -2.671\*\*\* | -0.960\*\*\* | -17.759\*\*\* | -9.315\*\*\* | -7.463\*\*\* | -9.434 | -27.193\*\*\* |
|  | (0.406) | (0.188) | (0.292) | (0.685) | (0.485) | (0.540) | (8.649) | (2.110) |
| ***N*** | 22792 | 22792 | 22792 | 22792 | 22792 | 22792 | 19949 | 20857 |
| **R2** | 0.374 | 0.464 | 0.187 | 0.235 | 0.304 | 0.059 | 0.178 | 0.119 |
| **F** | 593.021 | 1011.763 | 193.771 | 398.929 | 530.908 | 134.947 | 274.393 | 130.447 |

*Note: robust standard errors are in brackets. \*, \*\* and \*\*\* denote significance levels at 10%, 5% and 1%, respectively.*

In the climate change literature, temperatures are often put into bins in regressions to capture their impacts (Yu et al., 2019). We follow these existing literature to perform the analysis in Table 6.2. Although the coefficients are generally smaller and also there are some variations in the general patterns, we can safely conclude that the largest effects apply to extreme weather conditions. In other words, even in the short-term, households do reduce consumption and increase savings as a response to extreme climates.

**Table 6.2. Temperature effects (bins) in 2012**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Model** | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| **Dependent variables** | Consum | N\_consum | U\_consum | Income | Wage income | Other income | Saving | Risky |
| **Temp<=10F** | -0.008\*\*\* | -0.006\*\*\* | -0.002 | -0.006\*\* | -0.011\*\*\* | 0.003 | 0.097\*\* | -0.051\*\*\* |
|  | (0.002) | (0.001) | (0.001) | (0.003) | (0.002) | (0.002) | (0.039) | (0.010) |
| **Temp=10F-20F** | -0.006\*\* | -0.006\*\*\* | -0.000 | -0.016\*\*\* | -0.016\*\*\* | -0.003 | -0.085 | -0.050\*\*\* |
|  | (0.003) | (0.001) | (0.002) | (0.005) | (0.004) | (0.004) | (0.070) | (0.017) |
| **Temp=20F-30F** | -0.002 | -0.003\*\*\* | 0.002 | 0.006\* | 0.004 | -0.001 | 0.010 | -0.039\*\*\* |
|  | (0.002) | (0.001) | (0.001) | (0.004) | (0.003) | (0.003) | (0.044) | (0.013) |
| **Temp=30F-40F** | -0.007\*\*\* | -0.006\*\*\* | -0.001 | -0.008\*\*\* | -0.009\*\*\* | 0.001 | 0.037 | -0.024\*\* |
|  | (0.002) | (0.001) | (0.001) | (0.003) | (0.002) | (0.002) | (0.036) | (0.010) |
| **Temp=40F-50F** | -0.005\*\*\* | -0.004\*\*\* | -0.000 | 0.003 | 0.000 | 0.002 | 0.061 | -0.042\*\*\* |
|  | (0.002) | (0.001) | (0.001) | (0.003) | (0.002) | (0.002) | (0.038) | (0.010) |
| **Temp=60F-70F** | -0.003 | -0.003\*\* | 0.001 | 0.007 | -0.002 | 0.004 | -0.043 | -0.038\*\* |
|  | (0.003) | (0.001) | (0.002) | (0.005) | (0.004) | (0.004) | (0.062) | (0.017) |
| **Temp=70F-80F** | -0.010\*\*\* | -0.006\*\*\* | -0.004\*\*\* | -0.014\*\*\* | -0.013\*\*\* | -0.001 | 0.074\*\* | -0.061\*\*\* |
|  | (0.001) | (0.001) | (0.001) | (0.003) | (0.002) | (0.002) | (0.033) | (0.008) |
| **Temp=80F-90F** | 0.000 | -0.001 | 0.001 | 0.007\* | 0.001 | 0.001 | -0.058 | -0.009 |
|  | (0.002) | (0.001) | (0.001) | (0.004) | (0.003) | (0.003) | (0.044) | (0.012) |
| **Temp=90F+** | 0.023\*\* | 0.005 | 0.016\*\* | 0.051\*\*\* | 0.015 | 0.028\* | 0.006 | -0.111\*\* |
|  | (0.010) | (0.004) | (0.007) | (0.017) | (0.012) | (0.014) | (0.193) | (0.053) |
| **Income** | 0.255\*\*\* | 0.121\*\*\* | 0.129\*\*\* |  |  |  | 3.896\*\*\* | 0.478\*\*\* |
|  | (0.007) | (0.003) | (0.005) |  |  |  | (0.078) | (0.032) |
| **F\_size** | 0.316\*\*\* | 0.227\*\*\* | 0.075\*\*\* | 0.051\* | -0.252\*\*\* | 0.299\*\*\* | -5.253\*\*\* | -0.200\*\* |
|  | (0.018) | (0.008) | (0.013) | (0.030) | (0.022) | (0.024) | (0.351) | (0.078) |
| **Age** | -0.040\*\*\* | -0.017\*\*\* | -0.023\*\*\* | -0.017\*\*\* | -0.041\*\*\* | 0.028\*\*\* | 0.781\*\*\* | 0.027\*\*\* |
|  | (0.002) | (0.001) | (0.001) | (0.003) | (0.002) | (0.002) | (0.031) | (0.008) |
| **Employ** | -0.097\*\*\* | -0.087\*\*\* | -0.005 | 1.102\*\*\* | 1.461\*\*\* | -0.388\*\*\* | 8.389\*\*\* | -0.487\*\*\* |
|  | (0.021) | (0.010) | (0.015) | (0.035) | (0.026) | (0.028) | (0.419) | (0.095) |
| **Marital** | 0.328\*\*\* | 0.224\*\*\* | 0.124\*\*\* | 0.747\*\*\* | 0.291\*\*\* | 0.449\*\*\* | -2.216\* | 1.890\*\*\* |
|  | (0.056) | (0.026) | (0.039) | (0.101) | (0.069) | (0.080) | (1.176) | (0.310) |
| **Education** | 0.589\*\*\* | 0.382\*\*\* | 0.205\*\*\* | 2.330\*\*\* | 1.798\*\*\* | 0.449\*\*\* | -1.237 | 4.818\*\*\* |
|  | (0.050) | (0.023) | (0.036) | (0.088) | (0.059) | (0.072) | (0.933) | (0.303) |
| **Health** | 0.178\*\*\* | 0.116\*\*\* | 0.049 | 0.432\*\*\* | 0.132\*\* | 0.293\*\*\* | 0.700 | 0.548\*\* |
|  | (0.043) | (0.020) | (0.031) | (0.074) | (0.051) | (0.058) | (1.082) | (0.238) |
| **Party** | 0.203\*\*\* | 0.110\*\*\* | 0.083\* | 1.368\*\*\* | 1.060\*\*\* | 0.279\*\*\* | 2.920\*\*\* | 1.437\*\*\* |
|  | (0.063) | (0.029) | (0.046) | (0.118) | (0.088) | (0.090) | (1.043) | (0.421) |
| **Gender** | 0.088\*\* | 0.021 | 0.074\*\* | -0.105 | 0.175\*\*\* | -0.266\*\*\* | -1.637\*\* | 0.902\*\*\* |
|  | (0.041) | (0.019) | (0.030) | (0.074) | (0.052) | (0.059) | (0.826) | (0.238) |
| **Rural** | -0.461\*\*\* | -0.522\*\*\* | 0.052 | -1.853\*\*\* | -1.440\*\*\* | -0.366\*\*\* | -2.049\* | -1.600\*\*\* |
|  | (0.048) | (0.022) | (0.035) | (0.074) | (0.053) | (0.061) | (1.170) | (0.187) |
| **Hukou** | 0.155\* | 0.035 | 0.133\*\* | 0.258 | 0.372\*\*\* | -0.103 | -3.782\*\*\* | 3.221\*\*\* |
|  | (0.081) | (0.039) | (0.057) | (0.164) | (0.112) | (0.132) | (1.416) | (0.411) |
| **GDP\_city** | 0.753\*\*\* | 0.514\*\*\* | 0.245\*\*\* | 2.273\*\*\* | 1.310\*\*\* | 0.824\*\*\* | -4.087\*\*\* | 3.104\*\*\* |
|  | (0.040) | (0.018) | (0.028) | (0.068) | (0.047) | (0.053) | (0.812) | (0.206) |
| **Structure** | -0.020\*\*\* | -0.013\*\*\* | -0.007\*\*\* | -0.070\*\*\* | -0.040\*\*\* | -0.025\*\*\* | 0.088\*\* | -0.102\*\*\* |
|  | (0.002) | (0.001) | (0.002) | (0.004) | (0.003) | (0.003) | (0.044) | (0.013) |
| **Constant** | -2.315\*\*\* | -1.763\*\*\* | -0.686 | -17.838\*\*\* | -8.014\*\*\* | -8.128\*\*\* | -9.353 | -18.934\*\*\* |
|  | (0.693) | (0.326) | (0.479) | (1.192) | (0.825) | (0.935) | (14.905) | (3.577) |
| ***N*** | 22792 | 22792 | 22792 | 22792 | 22792 | 22792 | 19949 | 20857 |
| **R2** | 0.376 | 0.465 | 0.188 | 0.238 | 0.307 | 0.060 | 0.179 | 0.121 |
| **F** | 384.004 | 656.049 | 125.823 | 258.129 | 333.788 | 86.898 | 176.594 | 83.386 |

*Note: robust standard errors are in brackets. \*, \*\* and \*\*\* denote significance levels at 10%, 5% and 1%, respectively.*

**7. Supplementary tables: additional analyses**

Household characteristics such as compositions can have significant impacts on household economic behavior (we thank an anonymous referee for this insightful comment), thus Table 7.1 include an additional variable “Composition”, which is the proportion of working age members (between 16-60 years old) in a household. The variable is shown to be significantly increase consumption and wage income, but reduce savings and other income. The impacts on our key variable “Temp\_std” are only marginal, thus including this variable does not change the main story in this paper.

Table 7.1 Including household composition effects

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Model** | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| **Dependent variables** | Consum | N\_consum | U\_consum | Income | Wage income | Other income | Saving | Risky |
| **Temp\_std** | -0.059\*\*\* | -0.049\*\*\* | -0.010\* | -0.118\*\*\* | -0.094\*\*\* | 0.031\*\*\* | 0.610\*\*\* | -0.235\*\*\* |
|  | (0.007) | (0.003) | (0.005) | (0.013) | (0.009) | (0.005) | (0.160) | (0.040) |
| **Income** | 0.254\*\*\* | 0.121\*\*\* | 0.128\*\*\* |  |  |  | 3.969\*\*\* | 0.477\*\*\* |
|  | (0.007) | (0.003) | (0.005) |  |  |  | (0.076) | (0.030) |
| **F\_size** | 0.338\*\*\* | 0.230\*\*\* | 0.093\*\*\* | 0.015 | -0.209\*\*\* | 0.030\*\*\* | -5.962\*\*\* | -0.173\*\* |
|  | (0.017) | (0.008) | (0.012) | (0.028) | (0.020) | (0.011) | (0.338) | (0.071) |
| **Age** | -0.033\*\*\* | -0.015\*\*\* | -0.018\*\*\* | -0.019\*\*\* | -0.030\*\*\* | -0.013\*\*\* | 0.635\*\*\* | 0.022\*\* |
|  | (0.002) | (0.001) | (0.001) | (0.003) | (0.002) | (0.001) | (0.034) | (0.009) |
| **Employ** | -0.143\*\*\* | -0.104\*\*\* | -0.035\*\* | 1.101\*\*\* | 1.324\*\*\* | 0.129\*\*\* | 9.794\*\*\* | -0.532\*\*\* |
|  | (0.021) | (0.010) | (0.015) | (0.034) | (0.025) | (0.013) | (0.439) | (0.089) |
| **Composition** | 0.515\*\*\* | 0.180\*\*\* | 0.332\*\*\* | -0.406\*\*\* | 0.710\*\*\* | -0.210\*\*\* | -12.245\*\*\* | 0.154 |
|  | (0.066) | (0.030) | (0.048) | (0.115) | (0.078) | (0.042) | (1.491) | (0.396) |
| **Marital** | 0.310\*\*\* | 0.211\*\*\* | 0.121\*\*\* | 0.723\*\*\* | 0.280\*\*\* | 0.065\*\* | -1.575 | 1.842\*\*\* |
|  | (0.053) | (0.025) | (0.037) | (0.094) | (0.064) | (0.033) | (1.126) | (0.286) |
| **Education** | 0.567\*\*\* | 0.379\*\*\* | 0.184\*\*\* | 2.353\*\*\* | 1.782\*\*\* | 0.105\*\*\* | -0.626 | 4.723\*\*\* |
|  | (0.048) | (0.023) | (0.034) | (0.084) | (0.056) | (0.033) | (0.889) | (0.281) |
| **Health** | 0.186\*\*\* | 0.120\*\*\* | 0.056\* | 0.449\*\*\* | 0.168\*\*\* | 0.134\*\*\* | 0.315 | 0.514\*\* |
|  | (0.041) | (0.019) | (0.030) | (0.068) | (0.047) | (0.024) | (1.023) | (0.216) |
| **Party** | 0.245\*\*\* | 0.139\*\*\* | 0.099\*\* | 1.311\*\*\* | 1.098\*\*\* | -0.055 | 1.653\* | 1.523\*\*\* |
|  | (0.060) | (0.027) | (0.043) | (0.110) | (0.082) | (0.035) | (0.996) | (0.390) |
| **Gender** | 0.071\* | 0.021 | 0.059\*\* | -0.038 | 0.227\*\*\* | -0.185\*\*\* | -1.063 | 0.931\*\*\* |
|  | (0.039) | (0.018) | (0.028) | (0.069) | (0.048) | (0.025) | (0.786) | (0.218) |
| **Rural** | -0.487\*\*\* | -0.514\*\*\* | 0.021 | -1.814\*\*\* | -1.343\*\*\* | 0.219\*\*\* | -2.706\*\* | -1.474\*\*\* |
|  | (0.045) | (0.020) | (0.033) | (0.067) | (0.049) | (0.030) | (1.094) | (0.167) |
| **Hukou** | 0.102 | 0.011 | 0.109\* | 0.151 | 0.249\*\* | -0.111 | -3.298\*\* | 2.967\*\*\* |
|  | (0.079) | (0.038) | (0.056) | (0.157) | (0.107) | (0.070) | (1.381) | (0.394) |
| **GDP\_city** | 0.710\*\*\* | 0.500\*\*\* | 0.222\*\*\* | 2.336\*\*\* | 1.339\*\*\* | 0.146\*\*\* | -2.797\*\*\* | 2.866\*\*\* |
|  | (0.037) | (0.017) | (0.026) | (0.061) | (0.043) | (0.021) | (0.725) | (0.185) |
| **Structure** | -0.018\*\*\* | -0.012\*\*\* | -0.006\*\*\* | -0.062\*\*\* | -0.033\*\*\* | -0.002\* | 0.108\*\*\* | -0.095\*\*\* |
|  | (0.002) | (0.001) | (0.001) | (0.003) | (0.003) | (0.001) | (0.037) | (0.011) |
| **Constant** | -3.638\*\*\* | -2.713\*\*\* | -1.013\*\*\* | -17.793\*\*\* | -10.268\*\*\* | -0.829\*\*\* | -11.453 | -26.944\*\*\* |
|  | (0.394) | (0.178) | (0.285) | (0.635) | (0.450) | (0.248) | (8.147) | (1.972) |
| **R2** | 25733 | 25733 | 25733 | 25733 | 25733 | 22096 | 22356 | 23525 |
| **r2** | 0.360 | 0.454 | 0.175 | 0.233 | 0.299 | 0.032 | 0.180 | 0.116 |
| **F** | 619.527 | 1039.054 | 208.699 | 411.368 | 592.331 | 52.054 | 287.310 | 128.212 |

*Note: Robust standard errors are in brackets. \*, \*\* and \*\*\* denote significance levels at 10%, 5% and 1%, respectively.*

Table 7.2 adds a few additional city-specific factors to control for possible issues. Specifically, we use population density (Popdensity), financial development (Finrate, (deposit balance of financial institutions at year-end+loans balance of financial institutions at year-end)/ GDP), and city level FDI (FDI, Actual Utilization of foreign capital/ GDP). These variables are significant factors, though their impacts on the key variable of interest are, once again, only marginal and confirm the robustness of our main story.

Table 7.2 Adding more city-level control variables

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Model** | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| **Dependent variables** | Consum | N\_consum | U\_consum | Income | Wage income | Other income | Saving | Risky |
| **Temp\_std** | -0.059\*\*\* | -0.051\*\*\* | -0.008 | -0.126\*\*\* | -0.086\*\*\* | 0.027\*\*\* | 0.534\*\*\* | -0.149\*\*\* |
|  | (0.008) | (0.004) | (0.006) | (0.014) | (0.010) | (0.005) | (0.170) | (0.043) |
| **Income** | 0.252\*\*\* | 0.120\*\*\* | 0.127\*\*\* |  |  |  | 3.944\*\*\* | 0.475\*\*\* |
|  | (0.007) | (0.003) | (0.005) |  |  |  | (0.076) | (0.031) |
| **F\_size** | 0.306\*\*\* | 0.218\*\*\* | 0.074\*\*\* | 0.022 | -0.259\*\*\* | 0.041\*\*\* | -5.212\*\*\* | -0.227\*\*\* |
|  | (0.017) | (0.008) | (0.012) | (0.029) | (0.021) | (0.012) | (0.334) | (0.073) |
| **Age** | -0.039\*\*\* | -0.017\*\*\* | -0.022\*\*\* | -0.013\*\*\* | -0.039\*\*\* | -0.010\*\*\* | 0.773\*\*\* | 0.021\*\*\* |
|  | (0.002) | (0.001) | (0.001) | (0.003) | (0.002) | (0.001) | (0.030) | (0.008) |
| **Employ** | -0.076\*\*\* | -0.080\*\*\* | 0.009 | 1.096\*\*\* | 1.438\*\*\* | 0.106\*\*\* | 8.424\*\*\* | -0.490\*\*\* |
|  | (0.020) | (0.009) | (0.015) | (0.033) | (0.024) | (0.012) | (0.398) | (0.088) |
| **Marital** | 0.341\*\*\* | 0.232\*\*\* | 0.129\*\*\* | 0.750\*\*\* | 0.313\*\*\* | 0.059\* | -2.096\* | 1.884\*\*\* |
|  | (0.054) | (0.025) | (0.038) | (0.096) | (0.066) | (0.034) | (1.135) | (0.295) |
| **Education** | 0.591\*\*\* | 0.387\*\*\* | 0.200\*\*\* | 2.322\*\*\* | 1.774\*\*\* | 0.104\*\*\* | -1.044 | 4.691\*\*\* |
|  | (0.049) | (0.023) | (0.035) | (0.085) | (0.056) | (0.033) | (0.900) | (0.286) |
| **Health** | 0.187\*\*\* | 0.122\*\*\* | 0.052\* | 0.466\*\*\* | 0.165\*\*\* | 0.145\*\*\* | 0.490 | 0.499\*\* |
|  | (0.041) | (0.019) | (0.030) | (0.070) | (0.049) | (0.025) | (1.038) | (0.224) |
| **Party** | 0.208\*\*\* | 0.126\*\*\* | 0.076\* | 1.357\*\*\* | 1.081\*\*\* | -0.041 | 2.702\*\*\* | 1.482\*\*\* |
|  | (0.061) | (0.028) | (0.044) | (0.112) | (0.084) | (0.036) | (1.005) | (0.398) |
| **Gender** | 0.071\* | 0.018 | 0.061\*\* | -0.043 | 0.236\*\*\* | -0.187\*\*\* | -1.005 | 0.968\*\*\* |
|  | (0.039) | (0.018) | (0.029) | (0.070) | (0.049) | (0.026) | (0.795) | (0.224) |
| **Rural** | -0.523\*\*\* | -0.534\*\*\* | 0.003 | -1.831\*\*\* | -1.397\*\*\* | 0.225\*\*\* | -1.471 | -1.429\*\*\* |
|  | (0.046) | (0.021) | (0.034) | (0.070) | (0.050) | (0.031) | (1.112) | (0.174) |
| **Hukou** | 0.167\*\* | 0.039 | 0.145\*\* | 0.168 | 0.320\*\*\* | -0.128\* | -4.277\*\*\* | 3.181\*\*\* |
|  | (0.080) | (0.038) | (0.057) | (0.159) | (0.109) | (0.071) | (1.398) | (0.401) |
| **GDP\_city** | 0.787\*\*\* | 0.527\*\*\* | 0.269\*\*\* | 2.391\*\*\* | 1.297\*\*\* | 0.193\*\*\* | -3.623\*\*\* | 1.971\*\*\* |
|  | (0.051) | (0.023) | (0.037) | (0.090) | (0.061) | (0.034) | (0.985) | (0.248) |
| **Structure** | -0.012\*\*\* | -0.010\*\*\* | -0.002 | -0.059\*\*\* | -0.033\*\*\* | -0.004\*\*\* | 0.009 | -0.072\*\*\* |
|  | (0.002) | (0.001) | (0.002) | (0.004) | (0.003) | (0.001) | (0.049) | (0.012) |
| **Popdensity** | 0.000 | 0.000\*\*\* | -0.000\* | 0.000\*\*\* | 0.000\*\*\* | -0.000\*\* | 0.000 | 0.002\*\*\* |
|  | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.001) | (0.000) |
| **Finrate** | 0.068\*\*\* | 0.021\*\*\* | 0.045\*\*\* | 0.029 | 0.018 | -0.025\*\* | -1.060\*\*\* | 0.392\*\*\* |
|  | (0.018) | (0.008) | (0.014) | (0.030) | (0.020) | (0.012) | (0.373) | (0.093) |
| **FDI** | -5.163\*\*\* | -1.930\*\*\* | -2.974\*\*\* | -3.624\* | -2.014 | -0.886 | 76.689\*\*\* | -12.850\*\* |
|  | (1.022) | (0.478) | (0.743) | (1.912) | (1.301) | (0.708) | (20.712) | (5.606) |
| **Constant** | -4.221\*\*\* | -2.909\*\*\* | -1.356\*\*\* | -19.110\*\*\* | -9.328\*\*\* | -1.303\*\*\* | -10.178 | -21.320\*\*\* |
|  | (0.472) | (0.215) | (0.343) | (0.813) | (0.560) | (0.329) | (9.602) | (2.264) |
| ***N*** | 24864 | 24864 | 24864 | 24864 | 24864 | 21320 | 21712 | 22764 |
| **R2** | 0.364 | 0.458 | 0.177 | 0.232 | 0.299 | 0.032 | 0.179 | 0.121 |
| **F** | 523.643 | 908.648 | 168.874 | 349.653 | 464.197 | 44.093 | 246.347 | 112.895 |

*Note: Robust standard errors are in brackets. \*, \*\* and \*\*\* denote significance levels at 10%, 5% and 1%, respectively.*

A few more city-level factors that may help understanding things related to a hedonic price perspective. For example, we have average wage level in cities (Wage\_city), percentage of college students per million of population (Undergraduaterate), motorway mileages (Road), and then added them into baseline regressions. These variables are important but including them does not change the main results. As argued by another reviewer that more city level variables can bring in multi-colinearity problems in the model, thus we only include this in the appendix (Table 7.3).

Table 7.3 Adding more city-level control variables II

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Model** | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| **Dependent variables** | Consum | N\_consum | U\_consum | Income | Wage income | Other income | Saving | Risky |
| **Temp\_std** | -0.065\*\*\* | -0.051\*\*\* | -0.014\*\* | -0.123\*\*\* | -0.089\*\*\* | 0.024\*\*\* | 0.714\*\*\* | -0.188\*\*\* |
|  | (0.008) | (0.004) | (0.006) | (0.015) | (0.010) | (0.006) | (0.170) | (0.044) |
| **Income** | 0.252\*\*\* | 0.120\*\*\* | 0.126\*\*\* |  |  |  | 3.964\*\*\* | 0.466\*\*\* |
|  | (0.007) | (0.003) | (0.005) |  |  |  | (0.076) | (0.031) |
| **F\_size** | 0.306\*\*\* | 0.218\*\*\* | 0.075\*\*\* | 0.038 | -0.251\*\*\* | 0.042\*\*\* | -5.260\*\*\* | -0.196\*\*\* |
|  | (0.017) | (0.008) | (0.012) | (0.028) | (0.020) | (0.012) | (0.332) | (0.072) |
| **Age** | -0.039\*\*\* | -0.017\*\*\* | -0.022\*\*\* | -0.014\*\*\* | -0.039\*\*\* | -0.010\*\*\* | 0.778\*\*\* | 0.018\*\* |
|  | (0.002) | (0.001) | (0.001) | (0.003) | (0.002) | (0.001) | (0.030) | (0.008) |
| **Employ** | -0.079\*\*\* | -0.079\*\*\* | 0.004 | 1.086\*\*\* | 1.430\*\*\* | 0.104\*\*\* | 8.415\*\*\* | -0.464\*\*\* |
|  | (0.020) | (0.009) | (0.014) | (0.032) | (0.024) | (0.012) | (0.394) | (0.087) |
| **Marital** | 0.328\*\*\* | 0.226\*\*\* | 0.122\*\*\* | 0.704\*\*\* | 0.285\*\*\* | 0.057\* | -1.737 | 1.855\*\*\* |
|  | (0.053) | (0.025) | (0.037) | (0.095) | (0.065) | (0.034) | (1.135) | (0.291) |
| **Education** | 0.596\*\*\* | 0.386\*\*\* | 0.205\*\*\* | 2.395\*\*\* | 1.810\*\*\* | 0.102\*\*\* | -1.057 | 4.721\*\*\* |
|  | (0.049) | (0.023) | (0.035) | (0.084) | (0.056) | (0.033) | (0.900) | (0.281) |
| **Health** | 0.184\*\*\* | 0.119\*\*\* | 0.052\* | 0.466\*\*\* | 0.162\*\*\* | 0.148\*\*\* | 0.633 | 0.476\*\* |
|  | (0.041) | (0.019) | (0.030) | (0.068) | (0.048) | (0.024) | (1.033) | (0.220) |
| **Party** | 0.223\*\*\* | 0.130\*\*\* | 0.087\*\* | 1.331\*\*\* | 1.059\*\*\* | -0.041 | 2.000\*\* | 1.534\*\*\* |
|  | (0.060) | (0.027) | (0.044) | (0.111) | (0.083) | (0.035) | (1.007) | (0.394) |
| **Gender** | 0.070\* | 0.016 | 0.062\*\* | -0.046 | 0.230\*\*\* | -0.188\*\*\* | -1.079 | 0.926\*\*\* |
|  | (0.039) | (0.018) | (0.029) | (0.069) | (0.049) | (0.026) | (0.792) | (0.221) |
| **Rural** | -0.538\*\*\* | -0.543\*\*\* | -0.003 | -1.900\*\*\* | -1.458\*\*\* | 0.230\*\*\* | -1.559 | -1.602\*\*\* |
|  | (0.045) | (0.020) | (0.033) | (0.068) | (0.049) | (0.030) | (1.104) | (0.169) |
| **Hukou** | 0.137\* | 0.027 | 0.128\*\* | 0.010 | 0.217\*\* | -0.131\* | -3.941\*\*\* | 3.081\*\*\* |
|  | (0.079) | (0.038) | (0.056) | (0.158) | (0.108) | (0.072) | (1.391) | (0.397) |
| **GDP\_city** | 0.696\*\*\* | 0.427\*\*\* | 0.266\*\*\* | 2.092\*\*\* | 1.038\*\*\* | 0.317\*\*\* | -3.424\*\* | 0.631\* |
|  | (0.067) | (0.031) | (0.049) | (0.127) | (0.087) | (0.047) | (1.358) | (0.336) |
| **Structure** | -0.014\*\*\* | -0.008\*\*\* | -0.006\*\*\* | -0.046\*\*\* | -0.022\*\*\* | -0.006\*\*\* | 0.112\*\* | -0.037\*\*\* |
|  | (0.002) | (0.001) | (0.002) | (0.004) | (0.003) | (0.002) | (0.053) | (0.012) |
| **Wage\_city** | 0.076\*\*\* | 0.066\*\*\* | 0.014 | 0.386\*\*\* | 0.308\*\*\* | -0.073\*\*\* | -0.139 | 1.073\*\*\* |
|  | (0.024) | (0.011) | (0.018) | (0.045) | (0.033) | (0.015) | (0.494) | (0.147) |
| **Undergraduaterate** | -0.023\*\*\* | -0.008\* | -0.014\*\* | -0.155\*\*\* | -0.092\*\*\* | -0.011\* | 0.100 | 0.078 |
|  | (0.009) | (0.004) | (0.006) | (0.016) | (0.011) | (0.006) | (0.155) | (0.050) |
| **Road** | -0.058\*\*\* | -0.017\* | -0.040\*\* | -0.074\*\* | -0.002 | -0.043\*\*\* | 0.894\*\* | 0.188 |
|  | (0.022) | (0.010) | (0.016) | (0.037) | (0.028) | (0.010) | (0.452) | (0.142) |
| **Constant** | -3.201\*\*\* | -2.170\*\*\* | -1.010\*\*\* | -17.632\*\*\* | -7.981\*\*\* | -2.134\*\*\* | -21.017\* | -12.203\*\*\* |
|  | (0.535) | (0.247) | (0.389) | (0.978) | (0.673) | (0.381) | (11.078) | (2.618) |
| ***N*** | 25204 | 25204 | 25204 | 25204 | 25204 | 21634 | 21985 | 23089 |
| **R2** | 0.364 | 0.459 | 0.176 | 0.239 | 0.303 | 0.033 | 0.178 | 0.119 |
| **F** | 525.655 | 915.556 | 169.198 | 358.837 | 470.024 | 45.062 | 246.995 | 112.030 |

*Note: Robust standard errors are in brackets. \*, \*\* and \*\*\* denote significance levels at 10%, 5% and 1%, respectively.*

Migrating families can have very different characteristics from those native families. Table 7.4 reports statistical tests between these two group and there is obvious difference. To control for this, we use a simple propensity score matching (PSM) approach to reproduce Table 4 in the main context, and the results are reported in Table 7.5. Although there are numerical differences in the results, the key story remains valid.

Table 7.4. Statistical difference between migrants and native households.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| varname | obs(natives) | mean(natives) | obs(migrants) | mean(migrants) | mean-diff | t |
| Income | 23623 | 4.690 | 2113 | 6.352 | 1.662\*\*\* | -12.499 |
| F\_size | 23623 | 3.065 | 2113 | 2.587 | 0.477\*\*\* | 15.213 |
| Age | 23623 | 52.677 | 2113 | 38.378 | 14.299 | 44.055 |
| Employ | 23623 | 1.786 | 2113 | 1.676 | 0.110\*\*\* | 3.935 |
| Marital | 23623 | 0.851 | 2113 | 0.757 | 0.094\*\*\* | 11.386 |
| Education | 23623 | 0.360 | 2113 | 0.504 | -0.143\*\*\* | -13.075 |
| Health | 23623 | 0.789 | 2113 | 0.872 | -0.083\*\*\* | -9.071 |
| Party | 23623 | 0.159 | 2113 | 0.092 | 0.068\*\*\* | 8.260 |
| Gender | 23623 | 0.464 | 2113 | 0.490 | -0.025\*\* | -2.249 |
| Rural | 23623 | 0.343 | 2113 | 0.030 | 0.313\*\*\* | 30.125 |
| Hukou | 23623 | 0.987 | 2113 | 0.028 | 0.959 | 355.772 |
| GDP\_city | 23623 | 10.358 | 2113 | 10.761 | -0.402\*\*\* | 10.550 |
| structure | 23623 | 47.584 | 2113 | 0.768 | -0.165\*\*\* | -21.173 |
| *Note: Robust standard errors are in brackets. \*, \*\* and \*\*\* denote significance levels at 10%, 5% and 1%, respectively.* | | | | | | |

Table 7.5 Migrating families after PSM (Propensity score matching).

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Model** | (1) | (2) | (3) | (4) | (5) |
| **Dependent variables** | Consum | Consum | Consum | Consum | Consum |
| **CV\_Past** | -0.076\*\* | -0.078\*\* |  |  |  |
|  | (0.038) | (0.038) |  |  |  |
| **CV\_Present** |  |  | -0.061 | -0.051 | -0.106\*\*\* |
|  |  |  | (0.044) | (0.044) | (0.010) |
| **Controls** | Y | Y | Y | Y | Y |
| **Constant** | 5.117\*\*\* | 5.182 | 4.976\*\*\* | 4.925 | 6.374\*\*\* |
|  | (0.378) | (0.382) | (0.417) | (0.434) | (0.385) |
| ***N*** | 2061 | 1930 | 2113 | 1981 | 18361 |
| **R2** | 0.028 | 0.030 | 0.027 | 0.029 | 0.185 |
| **F** | 4.610 | 4.567 | 4.533 | 4.456 | 266.07 |

*Note: dependent variables are consumption expenditure (Consum) in all models. CV\_Past refers climate variation in the region before migrating, whereas CV\_Present refers to climate varation in the current residential area. “Controls” refer to the control variables used in the baseline regressions (Table 2). Models (2) and (4) are basically the same as models (1) and (3), but exclude migrating families moved within a one-year period. Model (5) include all non-migrating families (natives). Robust standard errors are in brackets. \*, \*\* and \*\*\* denote significance levels at 10%, 5% and 1%, respectively.*

As suggested by an anonymous referee, income may impose a nonlinear impact on consumption and other economic behavior of households. In addition, household wealth can also play an important role together with income. To accommodate this concern, Table 7.6 reports additional regression results by including quadratic form of income and also wealth in the control variable sets. There are indeed, clear evidence of nonlinearity and also role of wealth in the economic decision making process. Including these variables can change the coefficients on the key variable, but only numerically. The main conclusions remain valid.

Table 7.6 Including quadratic form of income and wealth

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Model** | (1) | (2) | (3) | (4) | (5) |
| **Dependent variables** | Consum | N\_consum | U\_consum | Saving | Risky |
| **Temp\_std** | -0.037\*\*\* | -0.038\*\*\* | 0.001 | 0.663\*\*\* | -0.186\*\*\* |
|  | (0.007) | (0.003) | (0.005) | (0.150) | (0.039) |
| **Income** | 0.215\*\*\* | 0.132\*\*\* | 0.082\*\*\* | 13.297\*\*\* | 0.589\*\*\* |
|  | (0.012) | (0.005) | (0.009) | (0.183) | (0.062) |
| **Income2** | -0.002\*\*\* | -0.002\*\*\* | 0.000 | -0.267\*\*\* | -0.011\*\*\* |
|  | (0.000) | (0.000) | (0.000) | (0.005) | (0.002) |
| **Wealth** | 0.009\*\*\* | 0.004\*\*\* | 0.004\*\*\* | -0.079\*\*\* | 0.000\*\*\* |
|  | (0.000) | (0.000) | (0.000) | (0.004) | (0.000) |
| **F\_size** | 0.265\*\*\* | 0.198\*\*\* | 0.054\*\*\* | -5.533\*\*\* | -0.300\*\*\* |
|  | (0.016) | (0.007) | (0.012) | (0.309) | (0.070) |
| **Age** | -0.039\*\*\* | -0.017\*\*\* | -0.022\*\*\* | 0.761\*\*\* | 0.018\*\* |
|  | (0.001) | (0.001) | (0.001) | (0.028) | (0.007) |
| **Employ** | -0.060\*\*\* | -0.086\*\*\* | 0.027\*\* | 3.969\*\*\* | -0.570\*\*\* |
|  | (0.019) | (0.009) | (0.014) | (0.375) | (0.087) |
| **Marital** | 0.263\*\*\* | 0.173\*\*\* | 0.111\*\*\* | -5.634\*\*\* | 1.608\*\*\* |
|  | (0.051) | (0.024) | (0.036) | (1.058) | (0.283) |
| **Education** | 0.404\*\*\* | 0.273\*\*\* | 0.127\*\*\* | -6.544\*\*\* | 4.097\*\*\* |
|  | (0.046) | (0.021) | (0.034) | (0.839) | (0.279) |
| **Health** | 0.119\*\*\* | 0.080\*\*\* | 0.029 | -1.704\* | 0.302 |
|  | (0.039) | (0.018) | (0.029) | (0.960) | (0.214) |
| **Party** | 0.172\*\*\* | 0.088\*\*\* | 0.077\* | -2.696\*\*\* | 1.241\*\*\* |
|  | (0.058) | (0.026) | (0.043) | (0.944) | (0.389) |
| **Gender** | 0.070\* | 0.016 | 0.062\*\* | -2.023\*\*\* | 0.881\*\*\* |
|  | (0.037) | (0.017) | (0.028) | (0.735) | (0.216) |
| **Rural** | -0.386\*\*\* | -0.432\*\*\* | 0.041 | 6.073\*\*\* | -0.976\*\*\* |
|  | (0.044) | (0.020) | (0.033) | (1.036) | (0.166) |
| **Hukou** | -0.197\*\*\* | -0.141\*\*\* | -0.032 | -0.984 | 2.208\*\*\* |
|  | (0.076) | (0.036) | (0.055) | (1.292) | (0.391) |
| **GDP\_city** | 0.359\*\*\* | 0.307\*\*\* | 0.068\*\* | -6.478\*\*\* | 1.835\*\*\* |
|  | (0.037) | (0.016) | (0.027) | (0.702) | (0.186) |
| **Structure** | -0.001 | -0.004\*\*\* | 0.002 | 0.126\*\*\* | -0.051\*\*\* |
|  | (0.002) | (0.001) | (0.001) | (0.036) | (0.011) |
| **Constant** | -0.240 | -0.961\*\*\* | 0.597\*\* | -2.414 | -18.302\*\*\* |
|  | (0.382) | (0.171) | (0.281) | (7.661) | (1.922) |
| ***N*** | 25736 | 25736 | 25736 | 22357 | 23525 |
| **R2** | 0.409 | 0.504 | 0.203 | 0.281 | 0.132 |
| **F** | 642.725 | 1123.648 | 201.335 | 544.382 | 124.170 |

*Note: Robust standard errors are in brackets. \*, \*\* and \*\*\* denote significance levels at 10%, 5% and 1%, respectively.*

The time a migrating family spent in their new city may change their behavior. Following the suggestions from an anonymous reviewer, we add the interaction term and the number of years a migrating family moves the new city (Year) in the regression similar to Table 4 in the main article. The interaction terms are however, not significant in all models.

Table 7.7 Including time of migration and the interaction term

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Model** | (1) | (2) | (3) | (4) |
| **Dependent variables** | Consum | Consum | Consum | Consum |
| **CV\_Past** | -0.057\* | -0.058\*\* |  |  |
|  | (0.030) | (0.030) |  |  |
| **CV\_Past \*Year** | 0.002 | 0.002 |  |  |
|  | (0.004) | (0.004) |  |  |
| **CV\_Present** |  |  | -0.054 | -0.050 |
|  |  |  | (0.034) | (0.036) |
| **CV\_Present \*Year** |  |  | -0.002 | -0.002 |
|  |  |  | (0.004) | (0.004) |
| **Year** | 0.048\*\*\* | 0.047\*\*\* | 0.048\*\*\* | 0.047\*\*\* |
|  | (0.012) | (0.013) | (0.012) | (0.012) |
| **Income** | 0.278\*\*\* | 0.275\*\*\* | 0.278\*\*\* | 0.277\*\*\* |
|  | (0.018) | (0.018) | (0.017) | (0.018) |
| **Controls** | Y | Y | Y | Y |
| **Constant** | -3.994\*\* | -4.331\*\* | -3.792\*\* | -4.055\*\* |
|  | (1.893) | (1.951) | (1.833) | (1.889) |
| ***N*** | 2061 | 1930 | 2113 | 1981 |
| **R2** | 0.330 | 0.329 | 0.333 | 0.333 |
| **F** | 42.477 | 41.012 | 44.126 | 42.881 |

*Note: dependent variables are consumption expenditure (Consum) in all models. CV\_Past refers climate variation in the region before migrating, whereas CV\_Present refers to climate varation in the current residential area. Year refers to the number of years migrating households move to their new city. Interactive variables are demeaned following (Balli and Sorensen, 2013). “Controls” refer to the control variables used in the baseline regressions (Table 2). Models (2) and (4) are basically the same as models (1) and (3), but exclude migrating families moved within a one-year period. Robust standard errors are in brackets. \*, \*\* and \*\*\* denote significance levels at 10%, 5% and 1%, respectively.*

Table 7.8 reports results including variations of precipitation in a city (Rain\_std), as suggested by an anonymous referee and also (Auffhammer et al., 2013). The impacts are small to the main coefficients and thus our main story remain valid.

Table 7.8. Including precipitation variation in cities.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Model** | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| **Dependent variables** | Consum | N\_consum | U\_consum | Income | Wage income | Other income | Saving | Risky |
| **Temp\_std** | -0.053\*\*\* | -0.038\*\*\* | -0.015\*\* | -0.114\*\*\* | -0.089\*\*\* | 0.042\*\*\* | 0.420\*\* | -0.309\*\*\* |
|  | (0.008) | (0.004) | (0.006) | (0.015) | (0.010) | (0.006) | (0.201) | (0.051) |
| **Rain\_std** | 0.001 | 0.002\*\*\* | -0.001 | 0.003 | 0.002 | 0.002\*\* | -0.022 | -0.008 |
|  | (0.001) | (0.001) | (0.001) | (0.002) | (0.002) | (0.001) | (0.025) | (0.006) |
| **Income** | 0.253\*\*\* | 0.120\*\*\* | 0.127\*\*\* |  |  |  | 3.947\*\*\* | 0.473\*\*\* |
|  | (0.007) | (0.003) | (0.005) |  |  |  | (0.076) | (0.031) |
| **F\_size** | 0.316\*\*\* | 0.224\*\*\* | 0.077\*\*\* | 0.047\* | -0.240\*\*\* | 0.041\*\*\* | -5.242\*\*\* | -0.181\*\* |
|  | (0.017) | (0.008) | (0.012) | (0.028) | (0.020) | (0.012) | (0.333) | (0.071) |
| **Age** | -0.039\*\*\* | -0.017\*\*\* | -0.023\*\*\* | -0.015\*\*\* | -0.039\*\*\* | -0.010\*\*\* | 0.780\*\*\* | 0.020\*\*\* |
|  | (0.002) | (0.001) | (0.001) | (0.003) | (0.002) | (0.001) | (0.030) | (0.008) |
| **Employ** | -0.082\*\*\* | -0.084\*\*\* | 0.006 | 1.068\*\*\* | 1.424\*\*\* | 0.105\*\*\* | 8.377\*\*\* | -0.503\*\*\* |
|  | (0.020) | (0.009) | (0.014) | (0.032) | (0.024) | (0.012) | (0.395) | (0.086) |
| **Marital** | 0.302\*\*\* | 0.205\*\*\* | 0.118\*\*\* | 0.707\*\*\* | 0.272\*\*\* | 0.067\*\* | -1.323 | 1.830\*\*\* |
|  | (0.054) | (0.025) | (0.037) | (0.095) | (0.065) | (0.033) | (1.133) | (0.290) |
| **Education** | 0.581\*\*\* | 0.382\*\*\* | 0.194\*\*\* | 2.323\*\*\* | 1.772\*\*\* | 0.098\*\*\* | -1.141 | 4.790\*\*\* |
|  | (0.049) | (0.023) | (0.035) | (0.084) | (0.056) | (0.033) | (0.896) | (0.284) |
| **Health** | 0.157\*\*\* | 0.109\*\*\* | 0.037 | 0.463\*\*\* | 0.150\*\*\* | 0.135\*\*\* | 0.825 | 0.508\*\* |
|  | (0.042) | (0.019) | (0.030) | (0.068) | (0.048) | (0.024) | (1.037) | (0.220) |
| **Party** | 0.229\*\*\* | 0.129\*\*\* | 0.093\*\* | 1.334\*\*\* | 1.065\*\*\* | -0.043 | 1.990\*\* | 1.587\*\*\* |
|  | (0.061) | (0.027) | (0.044) | (0.111) | (0.083) | (0.035) | (1.010) | (0.396) |
| **Gender** | 0.058 | 0.014 | 0.052\* | -0.080 | 0.204\*\*\* | -0.189\*\*\* | -1.231 | 0.899\*\*\* |
|  | (0.039) | (0.018) | (0.029) | (0.070) | (0.049) | (0.026) | (0.793) | (0.221) |
| **Rural** | -0.502\*\*\* | -0.518\*\*\* | 0.010 | -1.767\*\*\* | -1.375\*\*\* | 0.242\*\*\* | -2.060\* | -1.517\*\*\* |
|  | (0.045) | (0.021) | (0.033) | (0.068) | (0.049) | (0.030) | (1.101) | (0.168) |
| **Hukou** | 0.139\* | 0.027 | 0.131\*\* | 0.172 | 0.318\*\*\* | -0.126\* | -3.683\*\*\* | 3.117\*\*\* |
|  | (0.080) | (0.038) | (0.056) | (0.158) | (0.108) | (0.071) | (1.391) | (0.397) |
| **GDP\_city** | 0.717\*\*\* | 0.495\*\*\* | 0.233\*\*\* | 2.335\*\*\* | 1.332\*\*\* | 0.139\*\*\* | -2.924\*\*\* | 2.788\*\*\* |
|  | (0.037) | (0.017) | (0.027) | (0.060) | (0.042) | (0.021) | (0.731) | (0.188) |
| **Structure** | -0.020\*\*\* | -0.013\*\*\* | -0.007\*\*\* | -0.067\*\*\* | -0.041\*\*\* | -0.001 | 0.095\*\* | -0.119\*\*\* |
|  | (0.002) | (0.001) | (0.002) | (0.004) | (0.003) | (0.001) | (0.040) | (0.012) |
| **Constant** | -3.099\*\*\* | -2.625\*\*\* | -0.579\*\* | -18.174\*\*\* | -9.129\*\*\* | -1.241\*\*\* | -21.098\*\* | -23.773\*\*\* |
|  | (0.407) | (0.186) | (0.293) | (0.658) | (0.466) | (0.260) | (8.518) | (1.946) |
| ***N*** | 25138 | 25138 | 25138 | 25138 | 25138 | 21573 | 21864 | 22998 |
| **R2** | 0.359 | 0.453 | 0.174 | 0.235 | 0.300 | 0.032 | 0.177 | 0.118 |
| **F** | 579.934 | 993.798 | 189.998 | 409.563 | 531.784 | 51.361 | 279.621 | 127.381 |

*Note: Robust standard errors are in brackets. \*, \*\* and \*\*\* denote significance levels at 10%, 5% and 1%, respectively.*

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