Appendices to

Are Public Sector Jobs Recession-Proof?

Were They Ever?

by

Jason L. Kopelman and Harvey S. Rosen

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**Appendix**

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| **Table A1\*****Distribution of Occupations in the Displaced Worker Survey** |
| Occupation | Private Sector  | Public Sector  | Total |
| Agriculture, Forestry, Fishing and Hunting | 8,364 | 748 | 9,112 |
| Armed Forces and Active Duty Military | 0 | 295 | 295 |
| Construction | 30,439 | 2,876 | 33,315 |
| Education Services | 18,746 | 60,450 | 79,196 |
| Art, Recreation, and Entertainment | 24,918 | 1,848 | 26,766 |
| Finance, Insurance, and Real Estate | 52,707 | 1,525 | 54,232 |
| Healthcare and Social Assistance | 65,121 | 10,738 | 75,859 |
| Informational and Communication Services | 14,318 | 501 | 14,819 |
| Management, Administrative and Support | 37,275 | 787 | 38,062 |
| Durable and Non-Durable Manufacturing | 114,314 | 733 | 115,047 |
| Mining | 6,333 | 10 | 6,343 |
| Professional, Scientific, and Technical Services | 31,035 | 3,432 | 34,467 |
| Public Administration | 0 | 44,751 | 44,751 |
| Personal Services | 44,969 | 983 | 45,952 |
| Wholesale and Retail Trade | 108,175 | 619 | 108,974 |
| Transportation and Warehousing | 41,982 | 10,519 | 52,601 |
| Utilities | 7,572 | 2,967 | 10,539 |

\*This table shows the breakdown of occupations in the Displaced Worker Survey, and the number of workers in each occupation in the analysis sample.

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| **Table A2\*****Probabilities of Job Loss: Probit Model**  |
|  | (1) | (2) | (3) | (4) |
| VARIABLES | Pr(*Lostjob*) | Pr(*Lostjob*) | Pr(*Lostjob*) | Pr(*Lostjob*) |
|  |  |  |  |  |
| *Federal* | -0.0613\*\*\* | -0.0573\*\*\* | -0.0576\*\*\* | -0.0467\*\*\* |
|  | (0.00202) | (0.00210) | (0.00208) | (0.00258) |
|  |  |  |  |  |
| *Local*  | -0.0614\*\*\* | -0.0593\*\*\* | -0.0593\*\*\* | -0.0456\*\*\* |
|  | (0.00178) | (0.00179) | (0.00178) | (0.00240) |
|  |  |  |  |  |
| *State* | -0.0566\*\*\* | -0.0517\*\*\* | -0.0518\*\*\* | -0.0366\*\*\* |
|  | (0.00220) | (0.00229) | (0.00227) | (0.00303) |
|  |  |  |  |  |
| *Recessions* | 0.0210\*\*\* | 0.0195\*\*\* | 0.00386\* | 0.0116\*\*\* |
|  | (0.00114) | (0.00113) | (0.00229) | (0.00212) |
|  |  |  |  |  |
| *Recessions\*Federal* | -0.0211\*\*\* | -0.0217\*\*\* | -0.0219\*\*\* | -0.0203\*\*\* |
|  | (0.00593) | (0.00583) | (0.00580) | (0.00584) |
|  |  |  |  |  |
| *Recessions\*Local* | 0.00905 | 0.00835 | 0.00834 | 0.00880 |
|  | (0.00607) | (0.00602) | (0.00600) | (0.00602) |
|  |  |  |  |  |
| *Recessions\*State* | -0.00842 | -0.00881 | -0.00868 | -0.00793 |
|  | (0.00684) | (0.00674) | (0.00672) | (0.00675) |
|  |  |  |  |  |
| *Great Recession*  | 0.0315\*\*\* | 0.0359\*\*\* | 0.00658\*\*\* | 0.0195\*\*\* |
|  | (0.00147) | (0.00150) | (0.00243) | (0.00254) |
|  |  |  |  |  |
| *Great Recession\*Federal* | 0.00818 | 0.00976 | 0.0102 | 0.00661 |
|  | (0.00865) | (0.00866) | (0.00867) | (0.00845) |
|  |  |  |  |  |
| *Great Recession\*Local* | -0.00927 | -0.00755 | -0.00743 | -0.0102 |
|  | (0.00693) | (0.00696) | (0.00695) | (0.00676) |
|  |  |  |  |  |
| *Great Recession\*State* | -0.00132 | 0.000557 | 0.000337 | -0.00217 |
|  | (0.00846) | (0.00851) | (0.00848) | (0.00827) |
|  |  |  |  |  |
| *Female* |  | -0.0273\*\*\* | -0.0268\*\*\* | -0.0179\*\*\* |
|  |  | (0.000830) | (0.000828) | (0.000886) |
|  |  |  |  |  |
| *Graduated High school* |  | -0.0133\*\*\* | -0.0121\*\*\* | -0.00935\*\*\* |
|  |  | (0.00133) | (0.00134) | (0.00134) |
|  |  |  |  |  |
| *Attended College* |  | -0.0171\*\*\* | -0.0168\*\*\* | -0.0109\*\*\* |
|  |  | (0.00136) | (0.00137) | (0.00141) |
|  |  |  |  |  |
| *Graduated College* |  | -0.0338\*\*\* | -0.0328\*\*\* | -0.0246\*\*\* |
|  |  | (0.00132) | (0.00133) | (0.00141) |
|  |  |  |  |  |
| *Widowed* |  | 0.0316\*\*\* | 0.0278\*\*\* | 0.0269\*\*\* |
|  |  | (0.00254) | (0.00256) | (0.00254) |
|  |  |  |  |  |
| *Divorced/Separated* |  | 0.0256\*\*\* | 0.0250\*\*\* | 0.0237\*\*\* |
|  |  | (0.00129) | (0.00129) | (0.00128) |
|  |  |  |  |  |
| *Never Married* |  | 0.0120\*\*\* | 0.0139\*\*\* | 0.0131\*\*\* |
|  |  | (0.00125) | (0.00132) | (0.00132) |
|  |  |  |  |  |
| *Black* |  | 0.00929\*\*\* | 0.0131\*\*\* | 0.0154\*\*\* |
|  |  | (0.00143) | (0.00151) | (0.00152) |
|  |  |  |  |  |
| *Indian or Alaskan* |  | 0.0116\*\*\* | 0.00616 | 0.00609 |
|  |  | (0.00391) | (0.00384) | (0.00382) |
|  |  |  |  |  |
| *Asian* |  | -0.0101\*\*\* | -0.0112\*\*\* | -0.0101\*\*\* |
|  |  | (0.00249) | (0.00253) | (0.00253) |
|  |  |  |  |  |
| *Other Race* |  | 0.0145\*\*\* | 0.0149\*\*\* | 0.0157\*\*\* |
|  |  | (0.00536) | (0.00545) | (0.00545) |
|  |  |  |  |  |
| *Age* |  | 0.00245\*\*\* | 0.00254\*\*\* | 0.00276\*\*\* |
|  |  | (0.000263) | (0.000266) | (0.000265) |
|  |  |  |  |  |
| *Age2* |  | -4.09e-05\*\*\* | -4.10e-05\*\*\* | -4.27e-05\*\*\* |
|  |  | (3.22e-06) | (3.24e-06) | (3.23e-06) |
|  |  |  |  |  |
| Observations | 723,546 | 723,546 | 723,546 | 723,546 |
|  |  |  |  |  |
| State Effects | No | No | Yes | Yes |
| Time Effects | No | No | Yes | Yes |
| Occupation  | No | No | No | Yes |
|  |  |  |  |  |

\*This table shows probit estimates of the marginal effects of the various right hand side variables on the probability of being displaced from one’s job. Variables are defined in Table 1. Standard errors are in parentheses below each percentage. A (\*\*\*) indicates that the variable is statistically significant at the 1 percent level, a (\*\*) at the 5 percent level, and a (\*) at the 10 percent level.

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| **Table A3\*****Probabilities of Job Loss** |
|   | (1) | (2) | (3) | (4) |
| VARIABLES | Private Worker | Federal Worker | Local Worker | State Worker |
|  | Probability of Job Loss  |
| Non-Recessions | 0.1144\*\*\* | 0.0545\*\*\* | 0.0531\*\*\* | 0.0602\*\*\* |
| (0.00090) | (0.00215) | (0.00182) | (0.00238) |
|  |  |  |  |  |
| Great Recession  | 0.1214\*\*\* | 0.0650\*\*\* | 0.0524\*\*\* | 0.0648\*\*\* |
| (0.00202) | (0.00509) | (0.00390) | (0.00529) |
|  |  |  |  |  |
| Other Recessions  | 0.1185\*\*\* | 0.0435\*\*\* | 0.0605\*\*\* | 0.0570\*\*\* |
| (0.00178) | (0.00300) | (0.00320) | (0.00388) |
|  |   |   |   |   |
|  |  |  Difference in Probability of Job Loss (Public minus Private) |
| Differentials in Non-Recessions |  | -0.0467\*\*\* | -0.0456\*\*\* | -0.0366\*\*\* |
|  | -(0.00258) | -(0.00240) | -(0.00303) |
|  |  |  |  |  |
| Differentials in Great Recession |  | -0.3502\*\*\* | -0.4592\*\*\* | -0.3519\*\*\* |
|  | (0.04021) | (0.03656) | (0.04199) |
|  |  |  |  |
| Differentials in Other Recessions |  | -0.5354\*\*\* | -0.3727\*\*\* | -0.4029\*\*\* |
|  | (0.03242) | (0.02636) | (0.03386) |

 \*Columns show probability of job loss during recessionary and non-recessionary periods for each sector based on the probit marginal effects reported in column (4) of Table A2. The first bank of numbers shows the probability that an individual in a given sector will be displaced depending on whether or not a recession was taking place. The second bank of numbers shows the difference in the probability of being displaced between an individual in a given government sector and an individual in the private sector. Standard errors are in parentheses below each percentage. A (\*\*\*) indicates that the variable is statistically significant at the 1 percent level, a (\*\*) at the 5 percent level, and a (\*) at the 10 percent level.

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| **Table A4\*****Probabilities of Job Loss by Race: OLS Estimates** |
|  | (Whites) | (Blacks) |
| VARIABLES | Pr(*Lostjob*) | Pr(*Lostjob*) |
|  |  |  |
| *Federal* | -0.0451\*\*\* | -0.0321\*\*\* |
|  | (0.00256) | (0.00657) |
|  |  |  |
| *Local* | -0.0424\*\*\* | -0.0451\*\*\* |
|  | (0.00236) | (0.00583) |
|  |  |  |
| *State* | -0.0354\*\*\* | -0.0303\*\*\* |
|  | (0.00275) | (0.00709) |
|  |  |  |
| *Recessions* | 0.0115\*\*\* | 0.0199\*\* |
|  | (0.00238) | (0.00840) |
|  |  |  |
| *Recessions\*Federal* | -0.0209\*\*\* | -0.0333\*\*\* |
|  | (0.00415) | (0.0105) |
|  |  |  |
| *Recessions\*Local* | -0.00148 | -0.0120 |
|  | (0.00429) | (0.0100) |
|  |  |  |
| *Recessions\*State* | -0.0183\*\*\* | 0.00447 |
|  | (0.00475) | (0.0145) |
|  |  |  |
| *Great Recession*  | 0.0353\*\*\* | 0.0509\*\*\* |
|  | (0.00278) | (0.00884) |
|  |  |  |
| *Great Recession\*Federal* | -0.00869 | -0.0137 |
|  | (0.00671) | (0.0161) |
|  |  |  |
| *Great Recession\*Local* | -0.0224\*\*\* | -0.0208 |
|  | (0.00527) | (0.0132) |
|  |  |  |
| *Great Recession\*State* | -0.0108 | -0.0336\*\* |
|  | (0.00692) | (0.0158) |
|  |  |  |
| *Female* | -0.0188\*\*\* | -0.0191\*\*\* |
|  | (0.000973) | (0.00298) |
|  |  |  |
| *Graduated High school* | -0.0109\*\*\* | -0.0134\*\*\* |
|  | (0.00172) | (0.00452) |
|  |  |  |
| *Attended College* | -0.0135\*\*\* | -0.0136\*\*\* |
|  | (0.00180) | (0.00488) |
|  |  |  |
| *Graduated College* | -0.0266\*\*\* | -0.0311\*\*\* |
|  | (0.00182) | (0.00541) |
|  |  |  |
| *Widowed* | 0.0269\*\*\* | 0.0217\*\*\* |
|  | (0.00256) | (0.00620) |
|  |  |  |
| *Divorced/Separated* | 0.0241\*\*\* | 0.0226\*\*\* |
|  | (0.00136) | (0.00363) |
|  |  |  |
| *Never Married* | 0.0119\*\*\* | 0.0170\*\*\* |
|  | (0.00146) | (0.00390) |
|  |  |  |
| *Age* | 0.00250\*\*\* | 0.00303\*\*\* |
|  | (0.000289) | (0.000862) |
|  |  |  |
| *Age2* | -3.81e-05\*\*\* | -5.78e-05\*\*\* |
|  | (3.43e-06) | (1.03e-05) |
|  |  |  |
| Constant | 0.108\*\*\* | 0.199\*\*\* |
|  | (0.00710) | (0.0563) |
|  |  |  |
| Observations | 615,003 | 70,599 |
| R-squared | 0.017 | 0.023 |
|  |  |  |
| State Effects | Yes | Yes |
| Time Effects | Yes | Yes |
| Occupation  | Yes | Yes |

\*This table reports the results when the OLS equation from column (4) of Table 2 is estimated separately for whites and non-whites. The right-hand side variables are defined in Table 1. Standard errors are in parentheses below each percentage. A (\*\*\*) indicates that the variable is statistically significant at the 1 percent level, a (\*\*) at the 5 percent level, and a (\*) at the 10 percent level.

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| **Table A5\*** **Probabilities of Job Loss by Gender: OLS Estimates** |
|  | (Males) | (Females) |
| VARIABLES | Pr(*Lostjob*) | Pr(*Lostjob*) |
|  |  |  |
| *Federal* | -0.0502\*\*\* | -0.0328\*\*\* |
|  | (0.00320) | (0.00348) |
|  |  |  |
| *Local*  | -0.0564\*\*\* | -0.0260\*\*\* |
|  | (0.00296) | (0.00314) |
|  |  |  |
| *State*  | -0.0455\*\*\* | -0.0243\*\*\* |
|  | (0.00374) | (0.00349) |
|  |  |  |
| *Recessions* | 0.0242\*\*\* | 0.0106\*\*\* |
|  | (0.00356) | (0.00301) |
|  |  |  |
| *Recessions\*Federal* | -0.0328\*\*\* | -0.0104\* |
|  | (0.00490) | (0.00605) |
|  |  |  |
| *Recessions\*Local* | -0.0114\*\* | 0.00567 |
|  | (0.00505) | (0.00598) |
|  |  |  |
| *Recessions\*State* | -0.0254\*\*\* | -0.00134 |
|  | (0.00664) | (0.00635) |
|  |  |  |
| *Great Recession*  | 0.0450\*\*\* | 0.0385\*\*\* |
|  | (0.00372) | (0.00342) |
|  |  |  |
| *Great Recession\*Federal* | -0.0164\*\* | -0.00216 |
|  | (0.00794) | (0.00881) |
|  |  |  |
| *Great Recession\*Local* | -0.0297\*\*\* | -0.0118 |
|  | (0.00634) | (0.00728) |
|  |  |  |
| *Great Recession\*State* | -0.0216\*\* | -0.00759 |
|  | (0.00908) | (0.00823) |
|  |  |  |
| *Graduated High school* | -0.0115\*\*\* | -0.00674\*\*\* |
|  | (0.00215) | (0.00226) |
|  |  |  |
| *Attended College* | -0.0151\*\*\* | -0.00694\*\*\* |
|  | (0.00227) | (0.00236) |
|  |  |  |
| *Graduated College* | -0.0343\*\*\* | -0.0158\*\*\* |
|  | (0.00227) | (0.00245) |
|  |  |  |
| *Widowed* | 0.0235\*\*\* | 0.0290\*\*\* |
|  | (0.00449) | (0.00272) |
|  |  |  |
| *Divorced/Separated* | 0.0137\*\*\* | 0.0300\*\*\* |
|  | (0.00192) | (0.00164) |
|  |  |  |
| *Never Married* | 0.00528\*\*\* | 0.0206\*\*\* |
|  | (0.00189) | (0.00185) |
|  |  |  |
| *Black* | 0.0157\*\*\* | 0.0131\*\*\* |
|  | (0.00227) | (0.00197) |
|  |  |  |
| *Indian or Alaskan* | 0.00823 | 0.00268 |
|  | (0.00580) | (0.00536) |
|  |  |  |
| *Asian* | -0.0104\*\*\* | -0.0111\*\*\* |
|  | (0.00358) | (0.00345) |
|  |  |  |
| *Other Race* | 0.0253\*\*\* | 0.00600 |
|  | (0.00848) | (0.00751) |
|  |  |  |
| *Age* | 0.00197\*\*\* | 0.00306\*\*\* |
|  | (0.000389) | (0.000367) |
|  |  |  |
| *Age2* | -3.52e-05\*\*\* | -4.33e-05\*\*\* |
|  | (4.59e-06) | (4.39e-06) |
|  |  |  |
| Constant | 0.137\*\*\* | 0.0478\*\*\* |
|  | (0.00989) | (0.00908) |
|  |  |  |
| Observations | 384,654 | 338,892 |
| R-squared | 0.019 | 0.013 |
| State Effects | Yes | Yes |
| Time Effects | Yes | Yes |
| Occupation  | Yes | Yes |

\*This table reports the results when the OLS equation from column (4) of Table 2 is estimated separately for males and females. The right-hand side variables are defined in Table 1. Standard errors are in parentheses below each percentage. A (\*\*\*) indicates that the variable is statistically significant at the 1 percent level, a (\*\*) at the 5 percent level, and a (\*) at the 10 percent level.

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| **Table A6\*****Probabilities of Job Loss by Education: OLS Estimates** |
|  | (Non-College Graduates) | (College Graduates) |
| VARIABLES | Pr(*Lostjob*) | Pr(*Lostjob*) |
|  |  |  |
| *Federal* | -0.0452\*\*\* | -0.0374\*\*\* |
|  | (0.00292) | (0.00401) |
|  |  |  |
| *Local*  | -0.0437\*\*\* | -0.0366\*\*\* |
|  | (0.00261) | (0.00382) |
|  |  |  |
| *State*  | -0.0341\*\*\* | -0.0318\*\*\* |
|  | (0.00329) | (0.00402) |
|  |  |  |
| *Recessions* | 0.0155\*\*\* | 0.0141\*\*\* |
|  | (0.00254) | (0.00437) |
|  |  |  |
| *Recessions\*Federal* | -0.0276\*\*\* | -0.00755 |
|  | (0.00467) | (0.00660) |
|  |  |  |
| *Recessions\*Local* | -0.00554 | 0.00436 |
|  | (0.00444) | (0.00782) |
|  |  |  |
| *Recessions\*State* | -0.0131\*\* | -0.0120\* |
|  | (0.00604) | (0.00692) |
|  |  |  |
| *Great Recession*  | 0.0400\*\*\* | 0.0447\*\*\* |
|  | (0.00306) | (0.00463) |
|  |  |  |
| *Great Recession\*Federal* | -0.00793 | -0.0103 |
|  | (0.00841) | (0.00805) |
|  |  |  |
| *Great Recession\*Local* | -0.0268\*\*\* | -0.00935 |
|  | (0.00588) | (0.00821) |
|  |  |  |
| *Great Recession\*State* | -0.0192\*\* | -0.00470 |
|  | (0.00820) | (0.00911) |
|  |  |  |
| *Female* | -0.0221\*\*\* | -0.00655\*\*\* |
|  | (0.00107) | (0.00170) |
|  |  |  |
| *Widowed* | 0.0257\*\*\* | 0.0282\*\*\* |
|  | (0.00254) | (0.00575) |
|  |  |  |
| *Divorced/Separated* | 0.0221\*\*\* | 0.0264\*\*\* |
|  | (0.00142) | (0.00263) |
|  |  |  |
| *Never Married* | 0.0107\*\*\* | 0.0202\*\*\* |
|  | (0.00159) | (0.00238) |
|  |  |  |
| *Black* | 0.0159\*\*\* | 0.0111\*\*\* |
|  | (0.00167) | (0.00344) |
|  |  |  |
| *Indian or Alaskan* | 0.00955\*\* | -0.000172 |
|  | (0.00463) | (0.00754) |
|  |  |  |
| *Asian* | -0.0119\*\*\* | -0.00970\*\*\* |
|  | (0.00356) | (0.00353) |
|  |  |  |
| *Other Race* | 0.0191\*\*\* | 0.00983 |
|  | (0.00664) | (0.0112) |
|  |  |  |
| *Age* | 0.00213\*\*\* | 0.00621\*\*\* |
|  | (0.000302) | (0.000573) |
|  |  |  |
| *Age2* | -3.79e-05\*\*\* | -6.97e-05\*\*\* |
|  | (3.60e-06) | (6.77e-06) |
|  |  |  |
| Constant | 0.115\*\*\* | -0.0392\*\*\* |
|  | (0.00740) | (0.0140) |
|  |  |  |
| Observations | 553,369 | 170,177 |
| R-squared | 0.017 | 0.015 |
|  |  |  |
| State Effects | Yes | Yes |
| Time Effects | Yes | Yes |
| Occupation  | Yes | Yes |

\*This table reports the results when the OLS equation from column (4) of Table 2 is estimated separately for non-college graduates and college graduates. The right-hand side variables are defined in Table 1. Standard errors are in parentheses below each percentage. A (\*\*\*) indicates that the variable is statistically significant at the 1 percent level, a (\*\*) at the 5 percent level, and a (\*) at the 10 percent level.

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| **Table A7\*****Probabilities of Job Loss for Teachers: OLS Estimates**  |
|  | (Teachers) |
| VARIABLES | Pr(*Jobloss*) |
|  |  |
| Public School Teacher | -0.0142\*\*\* |
|  | (0.00288) |
|  |  |
| *Recessions* | 0.00580 |
|  | (0.00697) |
|  |  |
| *Recessions\*Teachers* | 0.00777 |
|  | (0.00594) |
|  |  |
| *Great Recession*  | 0.0375\*\*\* |
|  | (0.00750) |
|  |  |
| *Great Recession\*Teachers* | -0.0104 |
|  | (0.00708) |
|  |  |
| *Female* | -0.0172\*\*\* |
|  | (0.00217) |
|  |  |
| *Graduated High school* | -0.00513 |
|  | (0.00605) |
|  |  |
| *Attended College* | -0.00868 |
|  | (0.00612) |
|  |  |
| *Graduated College* | -0.0255\*\*\* |
|  | (0.00564) |
|  |  |
| *Widowed* | 0.0191\*\*\* |
|  | (0.00517) |
|  |  |
| *Divorced/Separated* | 0.0185\*\*\* |
|  | (0.00317) |
|  |  |
| *Never Married* | 0.000832 |
|  | (0.00336) |
|  |  |
| *Black* | 0.0149\*\*\* |
|  | (0.00379) |
|  |  |
| *Indian or Alaskan* | -0.00842 |
|  | (0.00867) |
|  |  |
| *Asian* | -0.0194\*\*\* |
|  | (0.00552) |
|  |  |
| *Other Race* | 0.0214 |
|  | (0.0155) |
|  |  |
| *Age* | 0.000101 |
|  | (0.000650) |
|  |  |
| *Age2* | -1.57e-05\*\* |
|  | (7.38e-06) |
|  |  |
| Constant | 0.0995\*\*\* |
|  | (0.0164) |
|  |  |
| Observations | 77,954 |
| R-squared | 0.013 |
|  |  |
| State Effects | Yes |
| Time Effects | Yes |
| Occupation  | No |

\*This table shows ordinary least squares estimates of the probability of a teacher being displaced from one’s job. Variables are defined in Table 1. Standard errors are in parentheses below each percentage. A (\*\*\*) indicates that the variable is statistically significant at the 1 percent level, a (\*\*) at the 5 percent level, and a (\*) at the 10 percent level.