

# Single-Item Measure of Risk Orientation

Cherie D. Maestas, Florida State University

Scott Bell, Florida State University

William Pollock, SUNY Stonybrook

For related publications / working papers see:

- Ehrlich, Sean and Cherie Maestas. 2010. "Risk, Risk Orientation and Policy Opinions: The Case of Free Trade" *Political Psychology*. 31(5): 657-684.
- Maestas, Cherie and Pollock, William M., Measuring Generalized Risk Orientation with a Single Survey Item (May 3, 2010). Available at SSRN: <http://ssrn.com/abstract=1599867>



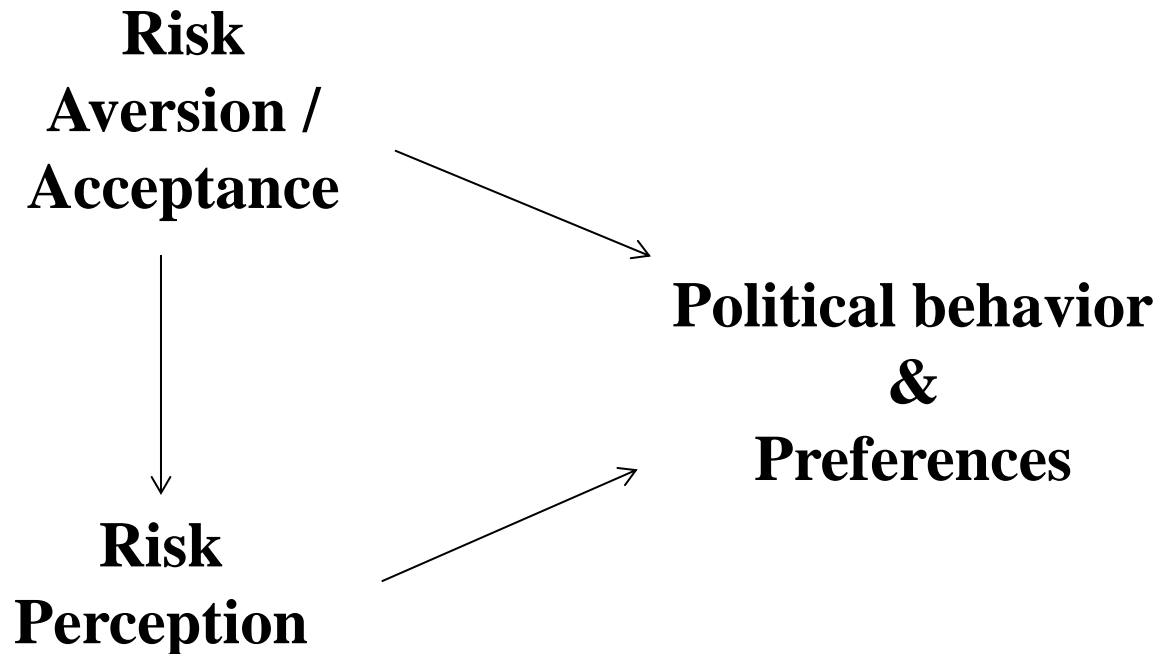
# Risk Orientation (Affect)

---

- General affective response to facing risky or uncertain situations
- Trait-based
  - Correlates with stable personality characteristics
  - Related to genetic characteristics
- Independent of context or framing
- Distinct from risk *perception* and *behavior*

# Effects of Risk-Orientation

---





# Prior Measurement Strategies

---

- Comparative Gambles
- Stock or market ownership
- Multi-item scales, usually 6 to 20 items
- Problems:
  - Too much space
  - Lack of generality
  - Behavioral rather than affective



# EGSS 2 Summer 2011

## Affect Towards Risk Question

---

“In general, people often face risks when making financial, career, or other life decisions. Overall, do you feel comfortable, uncomfortable, or neither comfortable nor uncomfortable taking risks?”

# EGSS 2 Summer 2011

## Affect Towards Risk Question

---

“In general, people often face risks when making

**financial, career, or other life decisions.**

Overall, do you **feel** comfortable, uncomfortable, or neither comfortable nor uncomfortable taking risks?”

# Split-Half Design: List Version

---

## **List (Risk-L)**

- Extremely comfortable taking risks
- Moderately comfortable taking risks
- Slightly comfortable taking risks
- Neither comfortable nor uncomfortable taking risks
- Slightly uncomfortable taking risks
- Moderately uncomfortable taking risks
- Extremely uncomfortable taking risks

# Split-Half Design: Branched Version

---

## **Branching (Risk-B)**

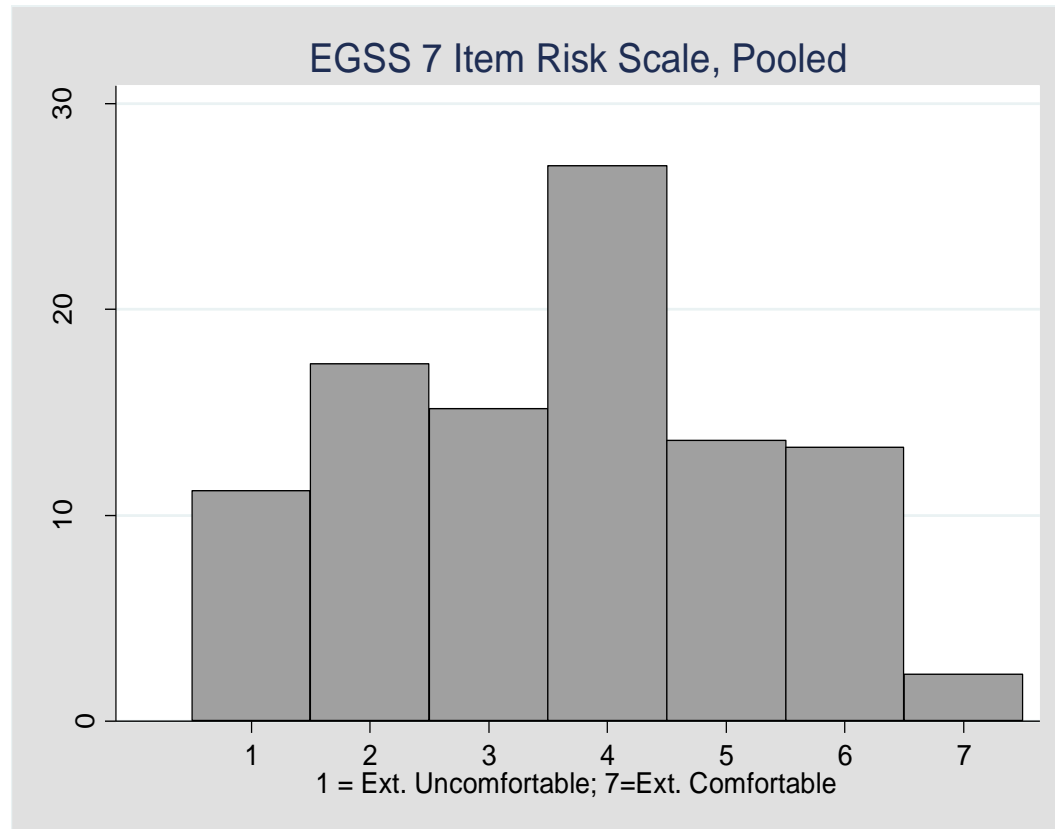
- Comfortable taking risks
  - Uncomfortable taking risks
  - Neither comfortable nor uncomfortable taking risks
- 

## **How (uncomfortable / comfortable) do you feel taking risks?**

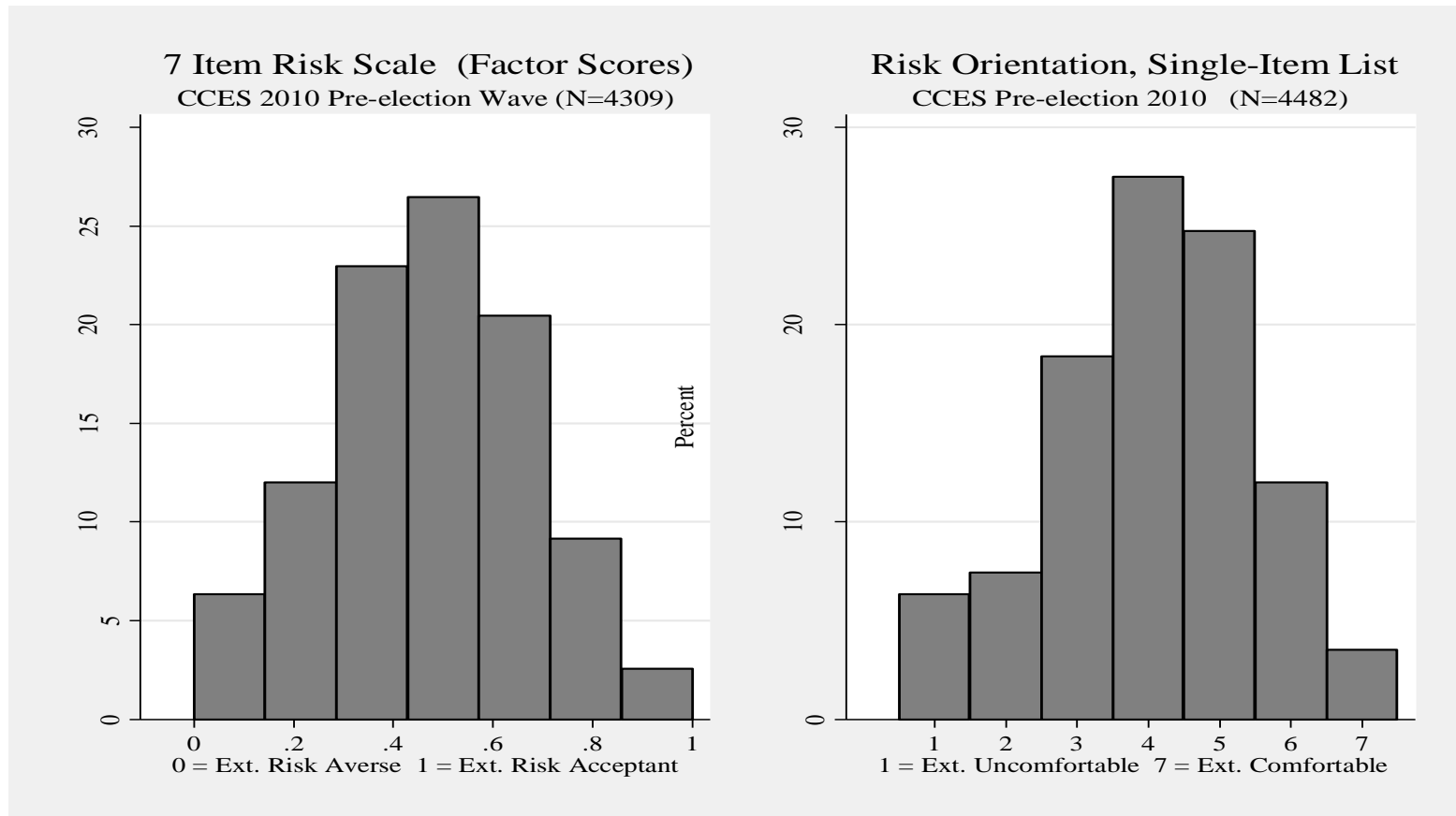
- Extremely (comfortable / uncomfortable)
- Moderately (comfortable / uncomfortable)
- Slightly (comfortable / uncomfortable)



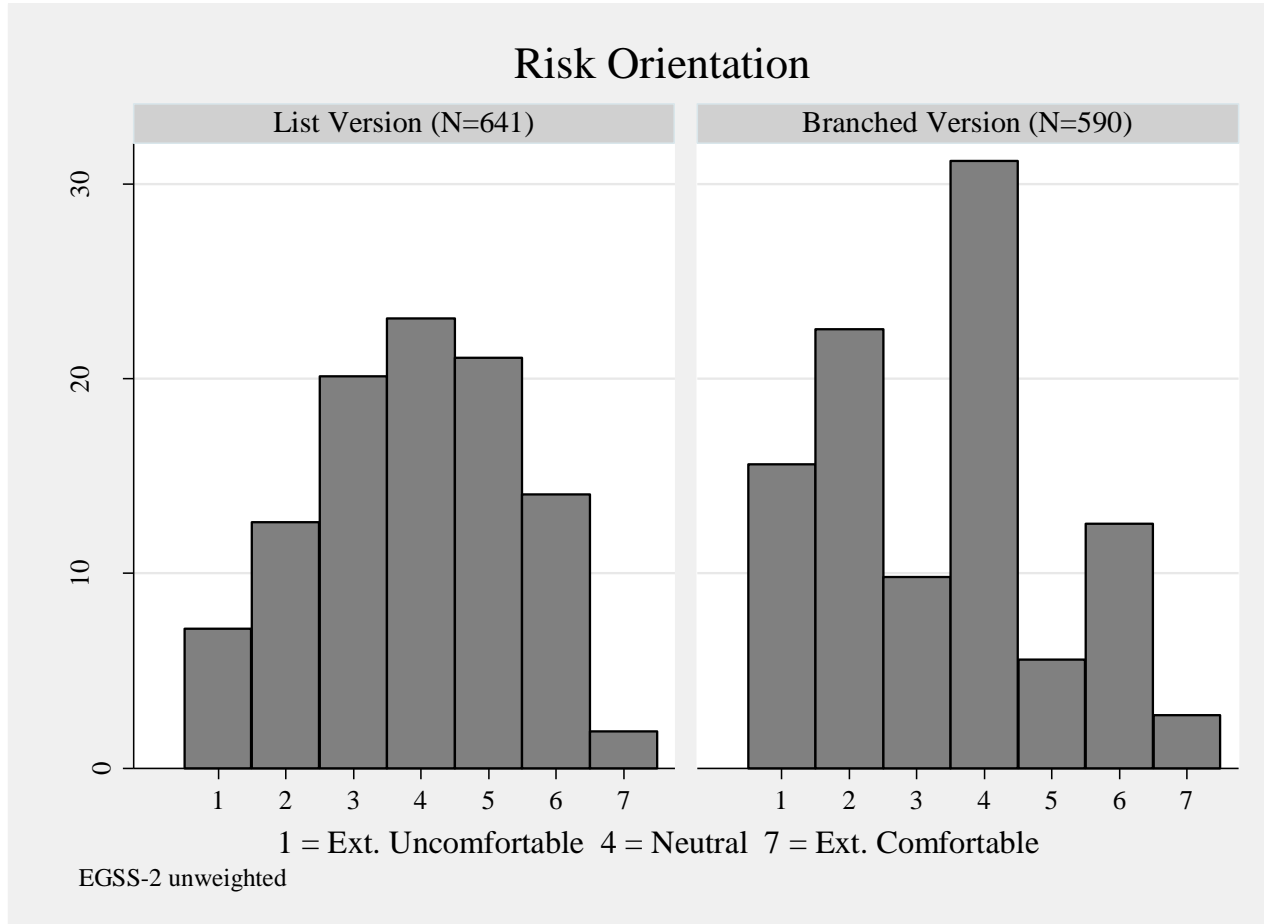
# Pooled Distribution



# Comparison: 2010 CCES Results



# Distributions of Risk-B and Risk-L



**Table 1. Demographic Predictors of Risk Orientation**

|                              | Risk (pooled)      | Risk (L)           | Risk (B)           |
|------------------------------|--------------------|--------------------|--------------------|
| Female                       | -.163 **<br>(.059) | -.153 *<br>(.082)  | -.167 *<br>(.086)  |
| Age                          | -.005 **<br>(.002) | -.005 **<br>(.002) | -.006 **<br>(.003) |
| Married                      | -.115 *<br>(.065)  | -.092<br>(.090)    | -.153<br>(.094)    |
| Income                       | .020 **<br>(.008)  | .005<br>(.011)     | .043 **<br>(.012)  |
| Education                    | .153 **<br>(.034)  | .234 **<br>(.047)  | .086 *<br>(.051)   |
| -----Cutpoints omitted ----- |                    |                    |                    |
| Log-Likelihood               | -2201              | -1125              | -1005              |
| $\chi^2$                     | 68.7               | 44.9               | 39.6               |
| N                            | 1,231              | 641                | 590                |

. \*\* p < .05, \* p < .10 (two-tailed)

Source: ANES 2010-2012 Evaluations of Government and Society Study

Note: Coefficients are ordered probit estimates with the dependent variable coded 1-7, with risk acceptance on the high end of the scale. "Risk (L)" is the model predicting the list version of the risk item, "Risk (B)" is the branched version, and "Risk" is a combined model of both versions. Standard errors are in parentheses (two-tailed)



# Substantive Examples

---

- **Political Participation**
- **Prospective Sociotropic & Pocketbook Assessments**
- **Political Affect**
- **Policy Preference**

*Note: All models run with weights and with full set of demographic and substantive controls*

# Political Participation

- Attend Rally (+)
- Donate money (+)
- Button-wearing (?)
- Phoning/Writing an Official (?)
- Scaling for all Q's:
  - 0=Never;
  - 1=Any at all

**Table 2. Participation by Pooled Risk Affect**

|   | Rally              | Phone              | Button             | Donate             |
|---|--------------------|--------------------|--------------------|--------------------|
| Risk  | .068 *<br>(.039)   | .029<br>(.033)     | .012<br>(.039)     | .081 *<br>(.038)   |
| Folded PID                                      | -.002<br>(.067)    | -.018<br>(.056)    | .196 ***<br>(.070) | .123 *<br>(.072)   |
| Civic Skills                                    | .331 ***<br>(.077) | .206 ***<br>(.069) | .269 ***<br>(.076) | .162 **<br>(.078)  |
| Efficacy  | .187 **<br>(.088)  | -.036<br>(.067)    | .090<br>(.089)     | .089<br>(.083)     |
| Interest  | .365 ***<br>(.076) | .435 ***<br>(.056) | .355 ***<br>(.066) | .336 ***<br>(.064) |
| Age   | -.004<br>(.004)    | .005 *<br>(.003)   | -.006 *<br>(.004)  | .017 ***<br>(.004) |
| -----Cutpoints and other controls omitted ----- |                    |                    |                    |                    |
| Wald Test                                       | 6.06 ***           | 7.18 ***           | 6.57 ***           | 7.08 ***           |
|   | 0                  | 0                  | 0                  | 0                  |
| N   | 1138               | 1138               | 1138               | 1138               |

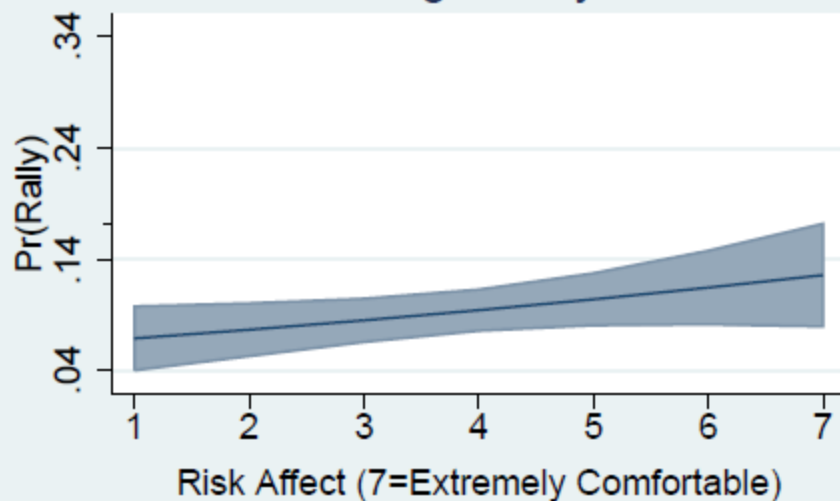
Source: ANES 2010-2012 Evaluations of Government and Society Study

Note: Coefficients are (weighted) probit estimates with standard errors in parentheses. Demographic controls (not shown) include 2008 vote, gender, and race (black, Hispanic, other minority).

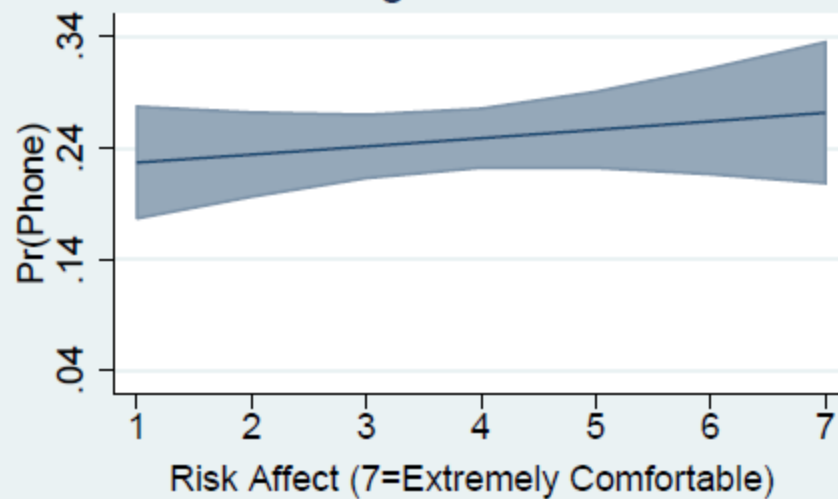
\* p < .10, \*\* p < .05, \*\*\* p < .01

# Participation by Pooled Risk Affect

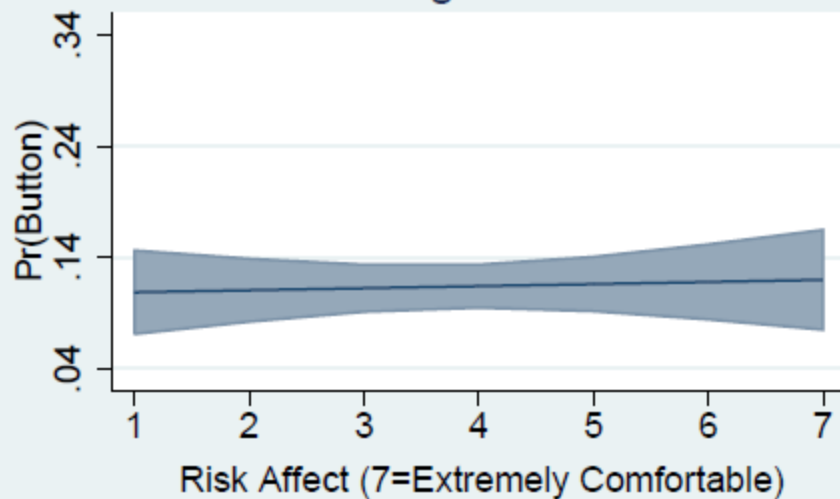
## Attending a Rally



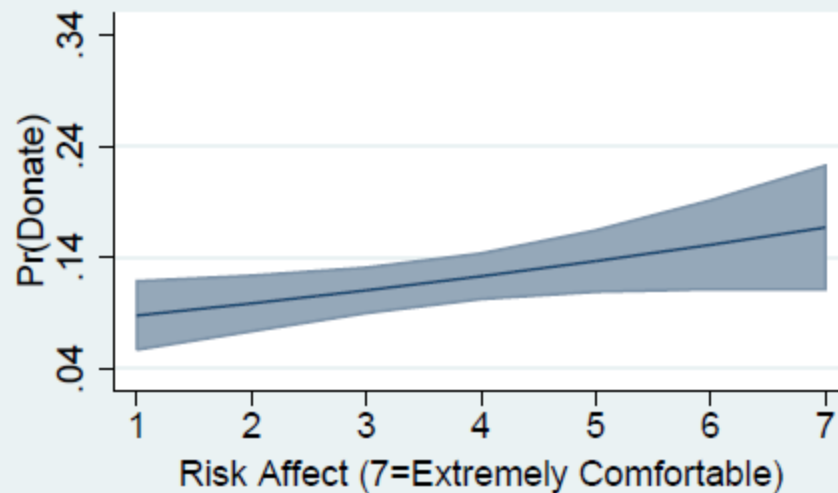
## Phoning an Official



## Wearing a Button



## Donating to a Campaign or Cause



# Sociotropic and Pocketbook

- Prospective Econ. Eval (+):

- 1=Much Worse,
- 2=Much Better

- Financial Worry (-):

- 1=Not at all
- 5=Extremely

**Table 3. Prospective Evaluation and Financial Worry**

|   | Econ Pros          | Fin Worry           |
|---|--------------------|---------------------|
| Risk Affect                                     | .073 ***<br>(.027) | -.102 ***<br>(.025) |
| Econ Retro                                      | .940 ***<br>(.061) | -.136 ***<br>(.048) |
| Interest  | .079 *<br>(.044)   | .178 ***<br>(.040)  |
| Education                                       | .033<br>(.052)     | -.023<br>(.047)     |
| Income  | .009<br>(.011)     | -.043 **<br>(.011)  |
| Female  | -.031<br>(.084)    | .203 ***<br>(.077)  |
| -----Cutpoints and other controls omitted ----- |                    |                     |
| Wald Test                                       | 23.46 ***<br>.00   | 7.65 ***<br>.00     |
| N   | 1142               | 1142                |

Source: ANES 2010-2012 Evaluations of Government and Society Study  
 Note: Coefficients are (weighted) ordered probit estimates with standard errors in parentheses. Demographic controls for our prospective econ model (not shown) include media exposure, party id, ideology, employment status, age, and race (black, Hispanic, other minority). Demographic controls for our financial worry model (not shown) include prospective econ evaluation, media exposure, party id (dem, rep dummy variables), ideology, civic skills, 2008 vote, efficacy, age, marital status.

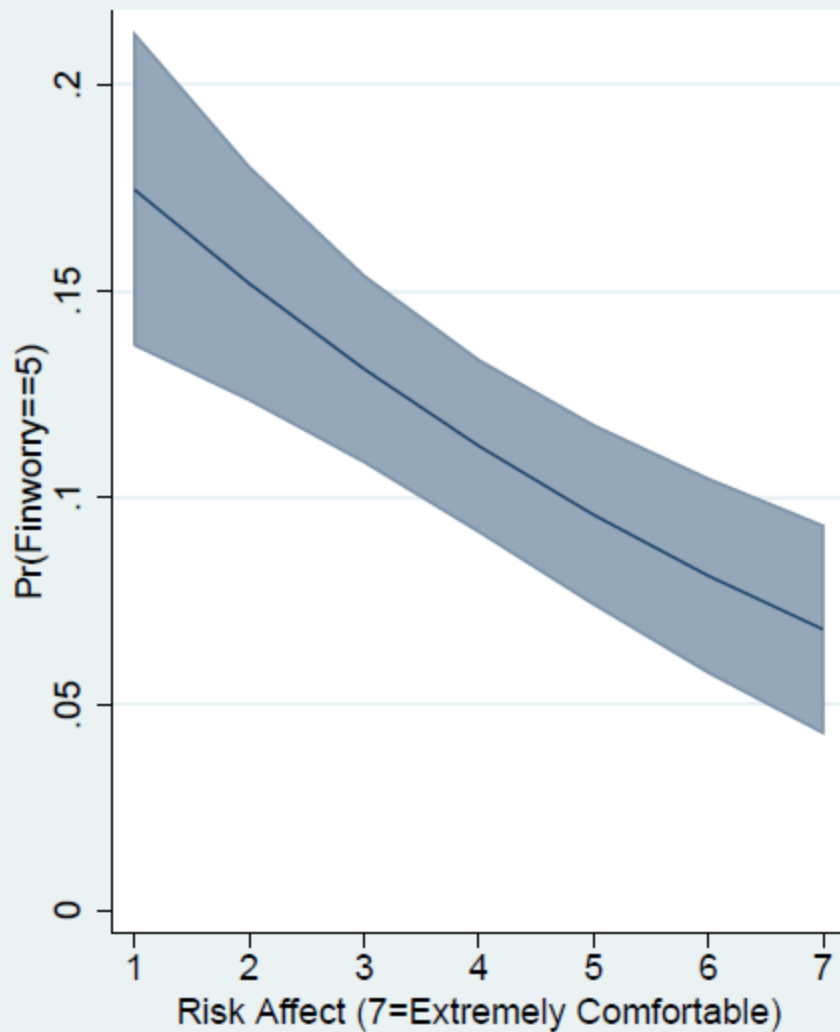
\* p < .10, \*\* p < .05, \*\*\* p < .01



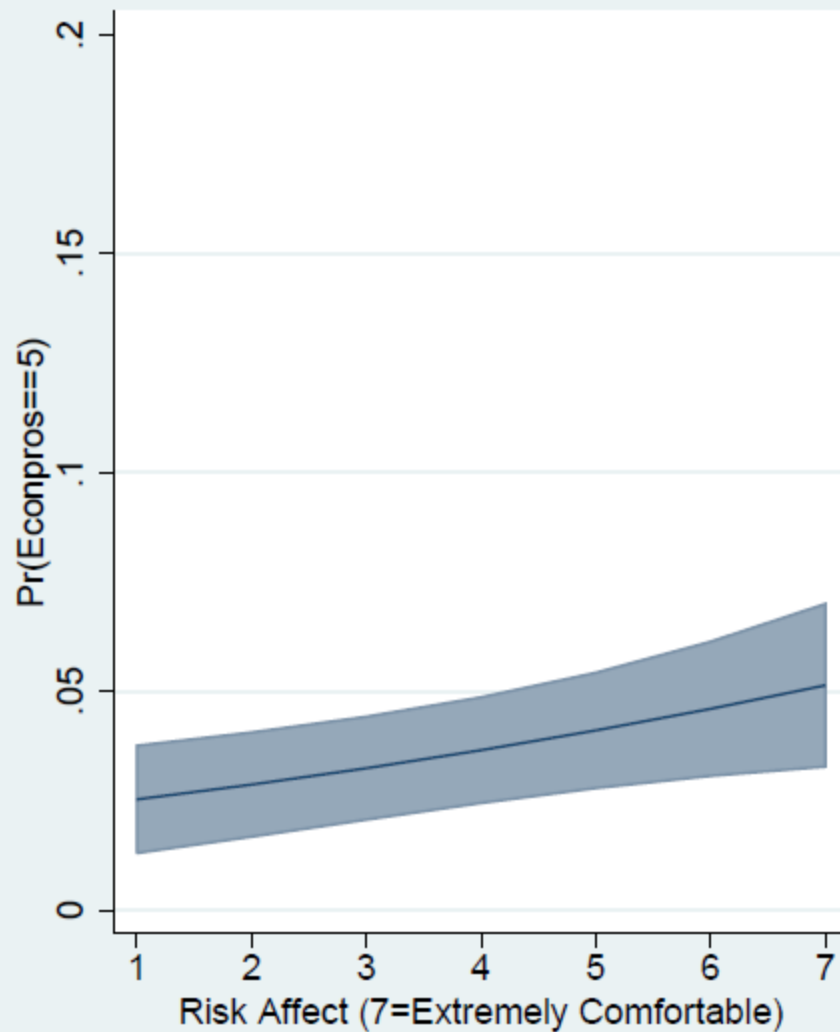
# Financial Worry and Economic Evaluation

## Pooled Risk Affect

Financial Worry (5=Extremely)



Prospective Econ Eval (5=Much Better)



# Affect

- Fear (Afraid) (-)
- Hope (+)
- Scaling on both questions:
  - 1=Not at all,
  - 5=Extremely;

**Table 4. Fear and Hope by Pooled Risk Affect**

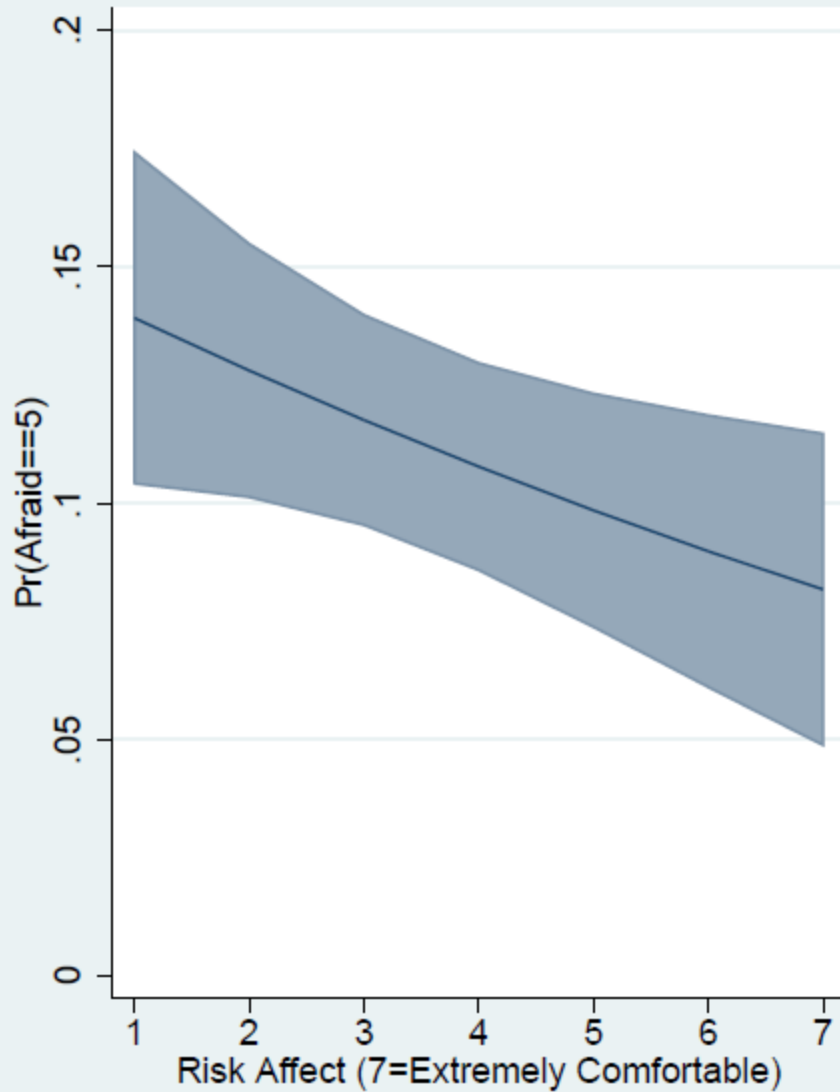
|  | Fear               | Hope               |
|--|--------------------|--------------------|
| Risk Affect  | -.055 **<br>(.027) | .075 ***<br>(.025) |
| Democrat   | -.093<br>(.098)    | .484 ***<br>(.099) |
| Republican   | .095<br>(.106)     | .125<br>(.104)     |
| Ideology   | .075 **<br>(.029)  | -.065 **<br>(.028) |
| Education  | -.101 **<br>(.041) | .037<br>(.036)     |
| Female   | .064<br>(.075)     | .211 ***<br>(.076) |
| Interest   | .177 ***<br>(.039) | .121 ***<br>(.039) |
| <i>-----Cutpoints and other controls omitted -----</i> |                    |                    |
|  | Other controls :   |                    |
| Wald Test  | 6.54 ***           | 9.24 ***           |
|  | 0                  | 0                  |
| N  | 1,197              | 1,197              |

Source: ANES 2010-2012 Evaluations of Government and Society Study  
 Note: Coefficients are (weighted) ordered probit estimates with standard errors in parentheses. Demographic controls (not shown) include employment status, age, local news exposure, and race (black, Hispanic, other minority).

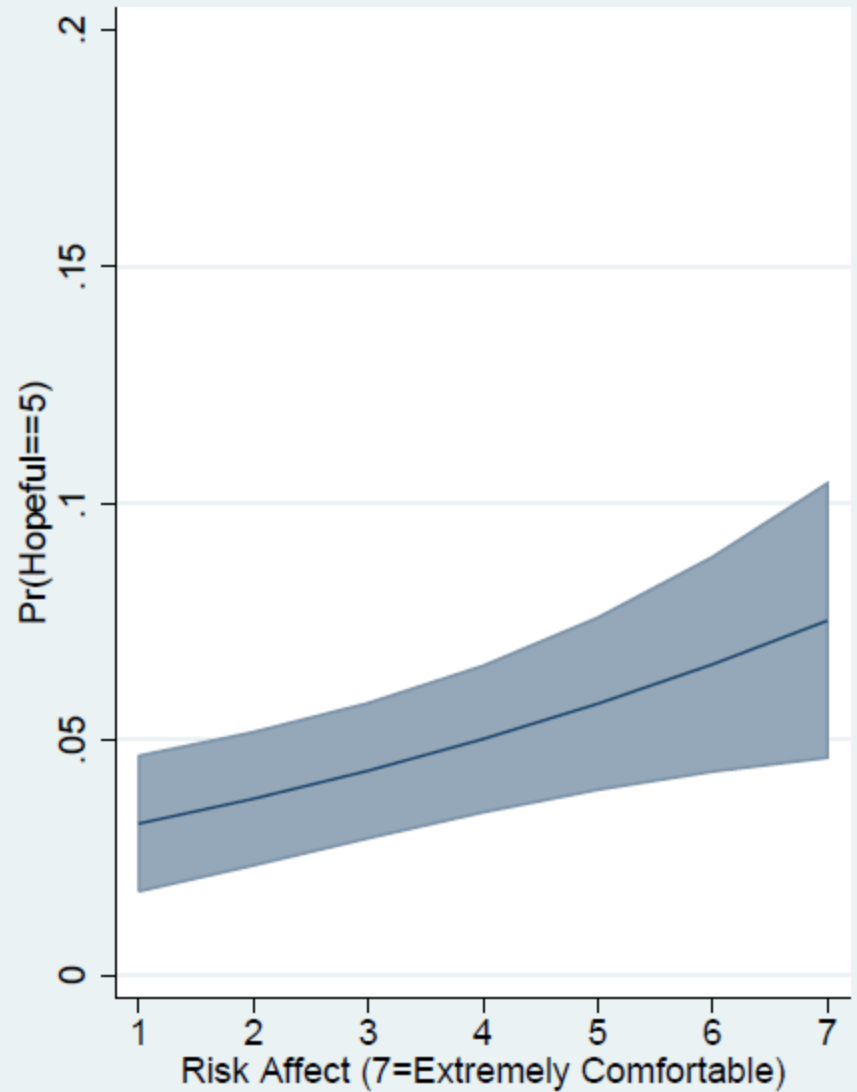
\* p < .10, \*\* p < .05, \*\*\* p < .01

# Fear and Hope by Pooled Risk Affect

Afraid (5=Extremely)



Hopeful (5=Extremely)



# Policy Support

- Unemployment (-):

- 1 = <26 weeks;
- 3 = >26 weeks;

- Govt Jobs (+):

- 1=Intervention
- 7=No Intervention

- Healthcare (-):

- 1=Oppose
- 7=Support

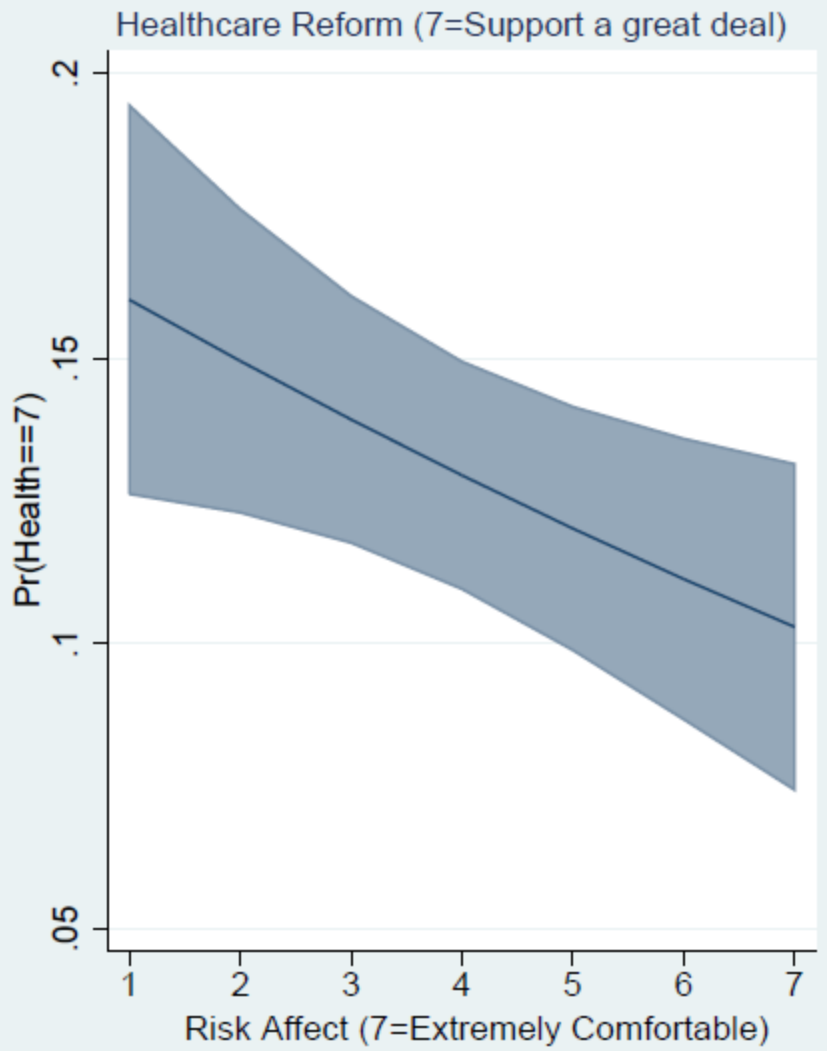
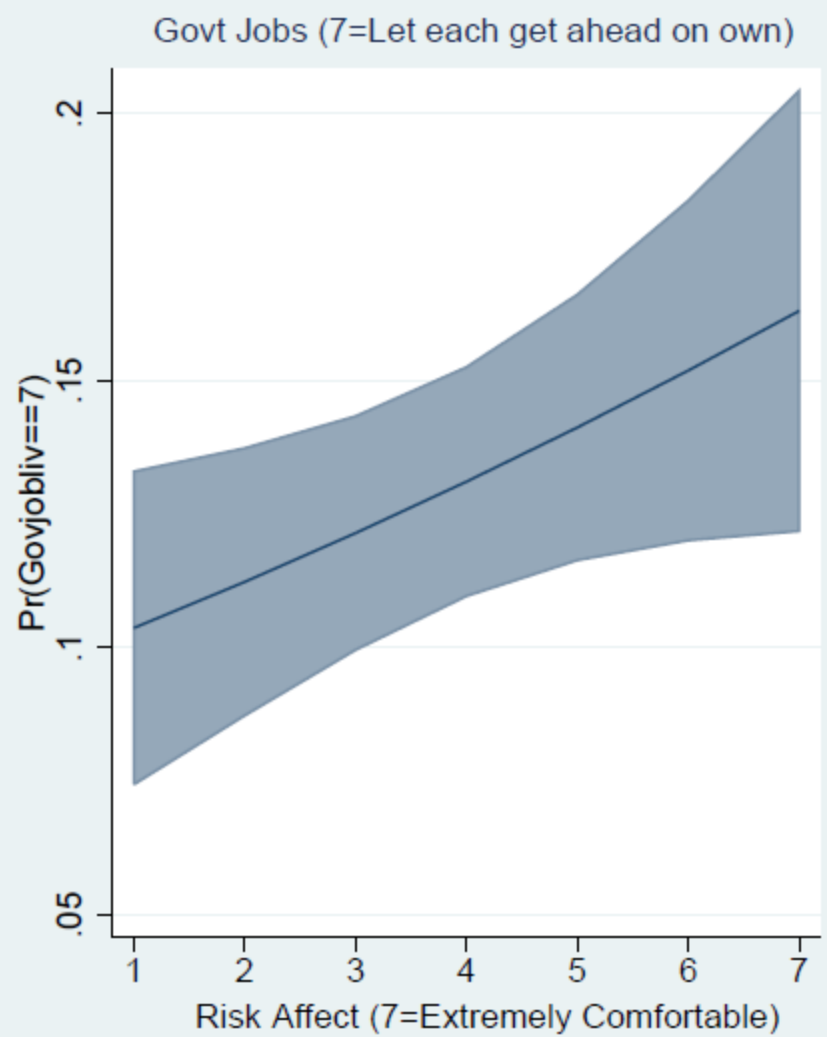
**Table 5. Policy Support by Pooled Risk Affect**

|   | Unemployment        | Government Jobs    | Healthcare          |
|---|---------------------|--------------------|---------------------|
| Risk Affect                                     | -.070 **<br>(.000)  | .054 **<br>(.026)  | -.060 **<br>(.026)  |
| Econ Retro                                      | .011<br>(.065)      | -.078<br>(.048)    | .136 ***<br>(.048)  |
| Econ Pros                                       | .096<br>(.065)      | -.014<br>(.052)    | .170 ***<br>(.052)  |
| Democrat  | .290 **<br>(.120)   | -.253 **<br>(.101) | .396 ***<br>(.098)  |
| Republican                                      | .058<br>(.109)      | .159<br>(.100)     | -.335 ***<br>(.109) |
| Ideology  | -.148 ***<br>(.034) | .175 ***<br>(.030) | -.234 ***<br>(.030) |
| Efficacy  | -.006<br>(.056)     | .003<br>(.052)     | .167 ***<br>(.048)  |
| Interest  | .054<br>(.048)      | .021<br>(.041)     | -.112 ***<br>(.041) |
| Income  | -.034 ***<br>(.012) | .031 ***<br>(.010) | .020 **<br>(.010)   |
| -----Cutpoints and other controls omitted ----- |                     |                    |                     |
| Wald Test                                       | 7.73 ***<br>.00     | 10.71 ***<br>.00   | 18.43 ***<br>.00    |
| N   | 1,183               | 1,100              | 1,188               |

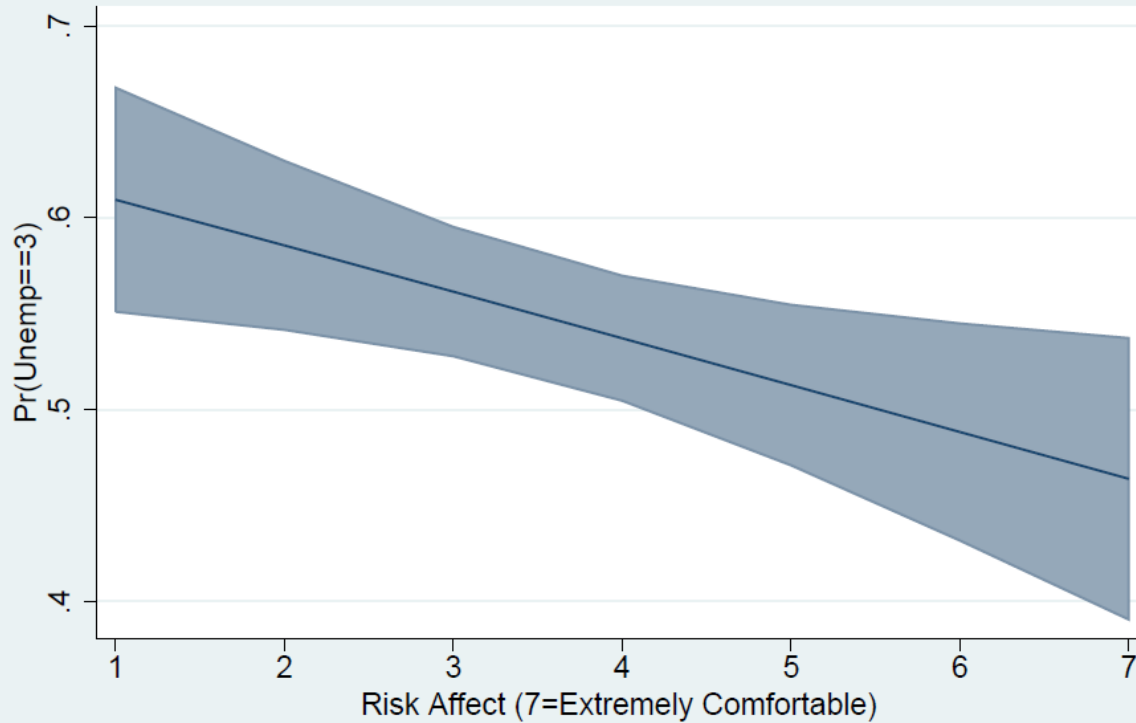
Source: ANES 2010-2012 Evaluations of Government and Society Study  
 Note: Coefficients are (weighted) ordered probit estimates with standard errors in parentheses. Demographic controls (not shown) include media exposure, civic skills, 2008 vote, gender, age, marital status, education, and race (black, Hispanic, other minority).

\* p < .10, \*\* p < .05, \*\*\* p < .01

# Policy Support by Pooled Risk Affect



Unemployment Exension Support  
by Pooled Risk Affect (3= More than 26 weeks)

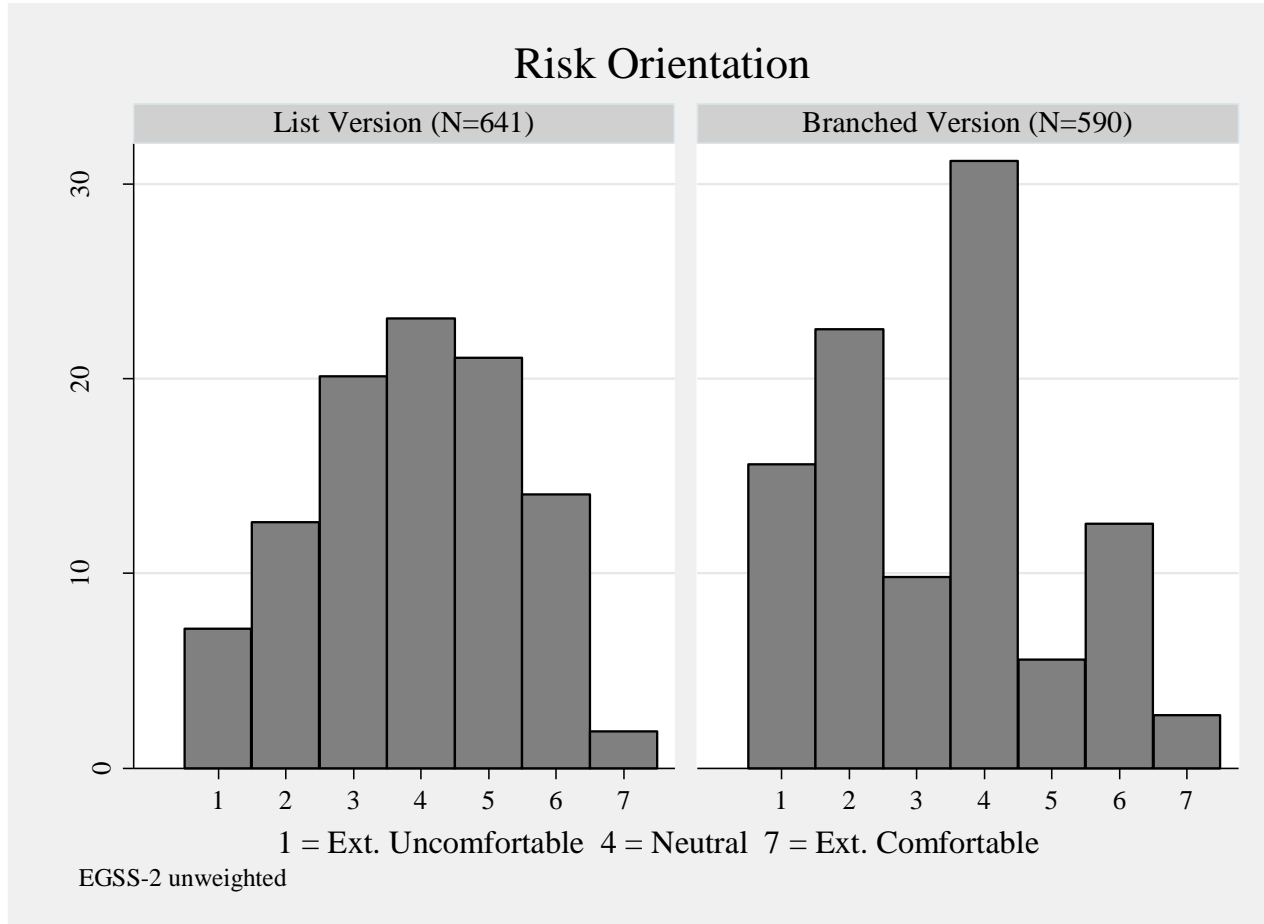




---

List or Branched?

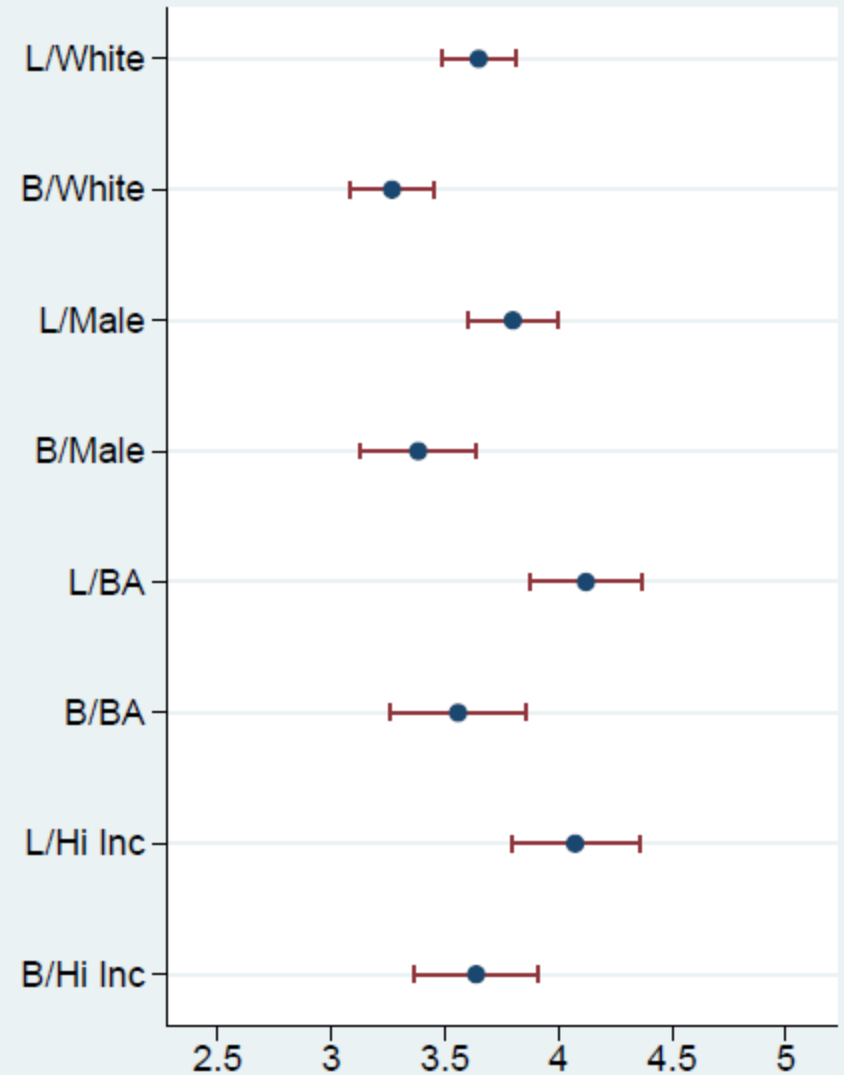
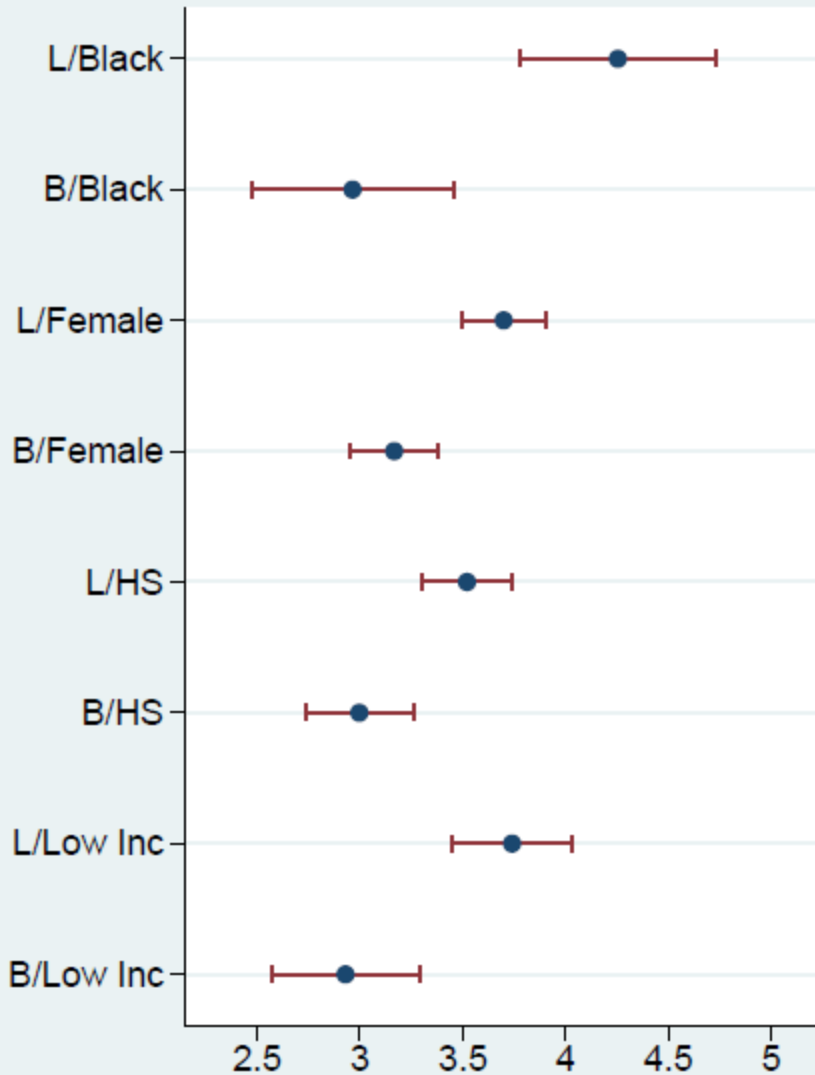
# Distributions of Risk-B and Risk-L





# Average Risk Orientation by Demographic and Question Type

(95% Confidence Intervals Reported)



# Rally and Donate—List vs. Branch

- Attend Rally (+)
- Donate money (+)
- Scaling for all Q's:
  - 0=Never;
  - 1=Any at all

**Table 9. Rally and Donate, List vs. Branched**

|   | Rally L            | Rally B            | Donate L           | Donate B           |
|---|--------------------|--------------------|--------------------|--------------------|
| Risk L  | .043<br>(.055)     |                    | .003<br>(.068)     |                    |
| Risk B  |                    | .081<br>(.059)     |                    | .143 **<br>(.047)  |
| Folded PID                                      | .066<br>(.090)     | -.092<br>(.098)    | .230 **<br>(.111)  | .054<br>(.093)     |
| Civic Skills                                    | .369 ***<br>(.111) | .250 **<br>(.112)  | .031<br>(.124)     | .213 **<br>(.107)  |
| Efficacy  | .155<br>(.127)     | .255 **<br>(.107)  | .101<br>(.116)     | .080<br>(.104)     |
| Interest  | .335 ***<br>(.100) | .431 ***<br>(.119) | .317 ***<br>(.091) | .398 ***<br>(.092) |
| Age   | -.004<br>.005      | .000<br>.006       | .029 ***<br>.006   | .006<br>.006       |
| -----Cutpoints and other controls omitted ----- |                    |                    |                    |                    |
| Wald Test                                       | 4.41 ***           | 3.82 ***           | 5.19 ***           | 3.63 ***           |
| N   | 0                  | 0                  | 0                  | 0                  |
|   | 590                | 548                | 589                | 548                |

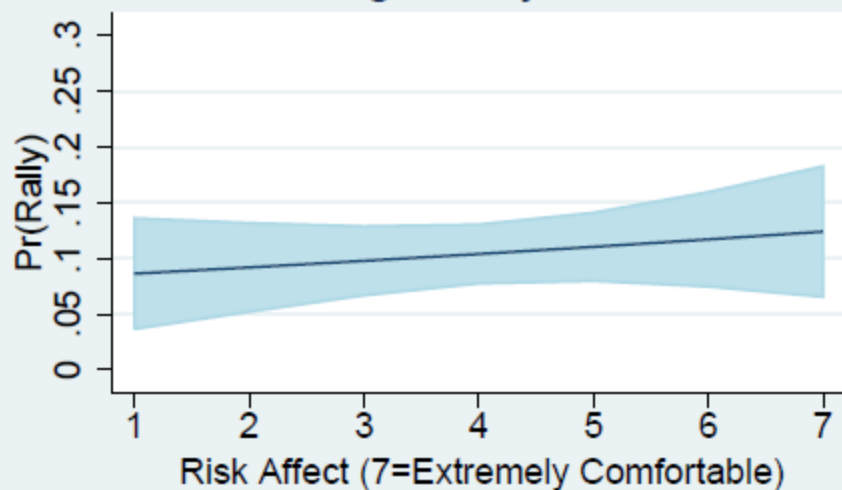
Source: ANES 2010-2012 Evaluations of Government and Society Study

Note: Coefficients are (weighted) probit estimates with standard errors in parentheses. Demographic controls (not shown) include 2008 vote, gender, and race (black, Hispanic, other minority).

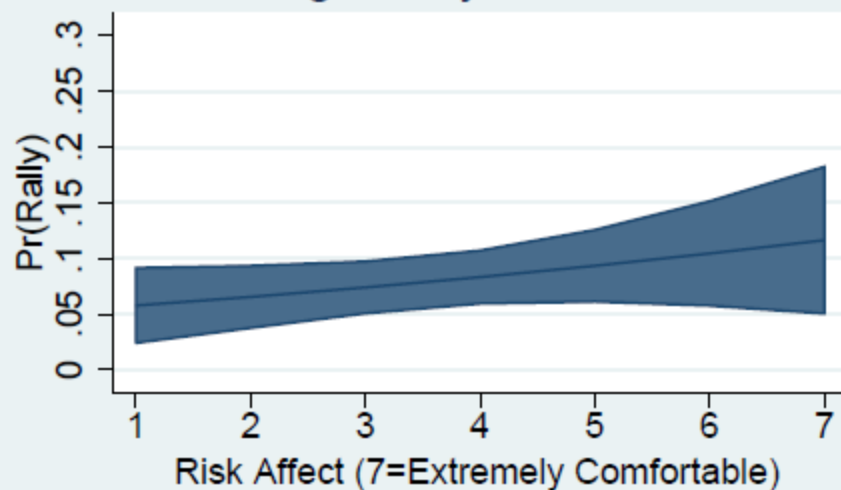
\* p < .10, \*\* p < .05, \*\*\* p < .01

# Rally and Donate, List vs. Branched

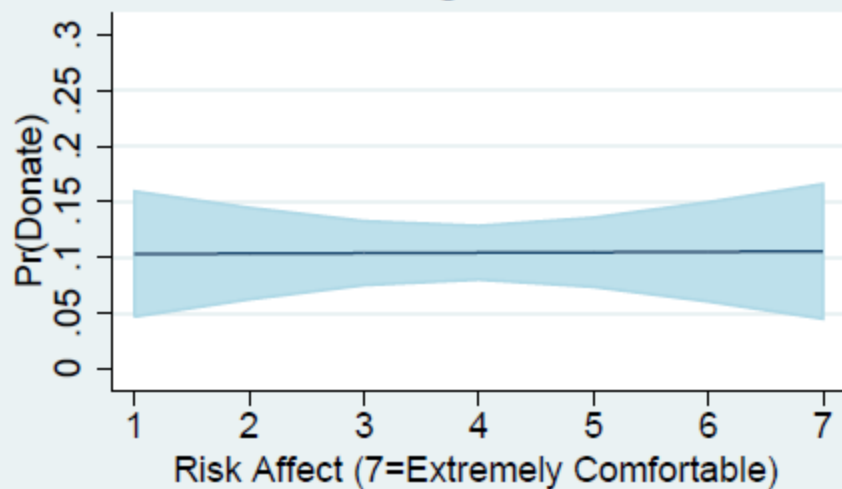
## Attending a Rally - List



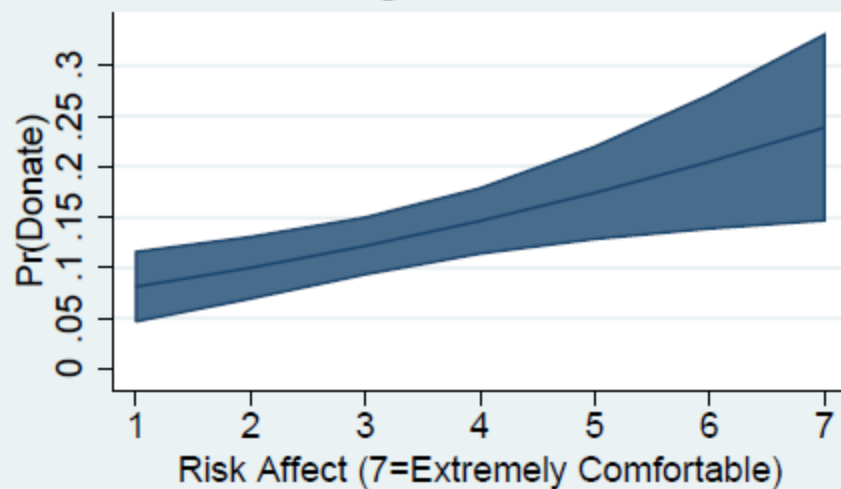
## Attending a Rally - Branched



## Donating - List



## Donating - Branched



# Economy—List vs. Branched

- Prospective Econ. Eval (+):

- 1=Much Worse,
- 2=Much Better

- Financial Worry (-):

- 1=Not at all
- 5=Extremely

Table 10. Prospective Evaluation and Financial Worry, List vs. Branched

|   | Econ L             | Econ B             | Fin Worry L         | Fin Worry B         |
|---|--------------------|--------------------|---------------------|---------------------|
| Risk L  | .090 **<br>(.038)  |                    | -.081 **<br>(.037)  |                     |
| Risk B  |                    | .079 **<br>(.038)  |                     | -.122 ***<br>(.034) |
| Econ Retro                                      | .939 ***<br>(.092) | .948 ***<br>(.074) | -.148 **<br>(.063)  | -.120<br>(.074)     |
| Interest  | .120 **<br>(.059)  | .043<br>(.064)     | .189 ***<br>(.056)  | .175 ***<br>(.056)  |
| Education                                       | .037<br>(.071)     | .040<br>(.071)     | -.060<br>(.066)     | .020<br>(.065)      |
| Income  | .013<br>(.016)     | .000<br>(.016)     | -.042 ***<br>(.015) | -.050 ***<br>(.015) |
| Female  | -.031<br>.115      | -.042<br>.117      | .229 **<br>.106     | .153<br>.111        |
| -----Cutpoints and other controls omitted ----- |                    |                    |                     |                     |
| Wald Test                                       | 12.11 ***<br>0     | 15.85 ***<br>0     | 4.91 ***<br>0       | 5.02 ***<br>0       |
| N   | 593                | 549                | 618                 | 571                 |

Source: ANES 2010-2012 Evaluations of Government and Society Study

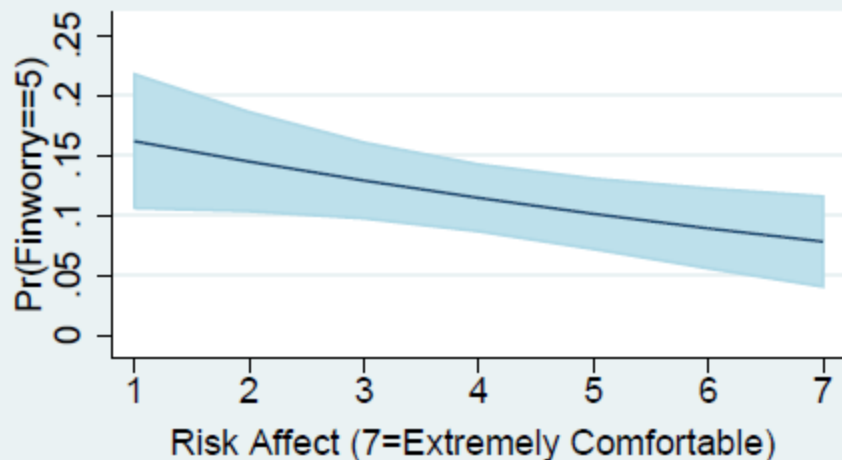
Note: Coefficients are (weighted) ordered probit estimates with standard errors in parentheses. Demographic controls for our prospective econ model (not shown) include media exposure, party id, ideology, employment status, age, and race (black, Hispanic, other minority). Demographic controls for our financial worry model (not shown) include prospective econ evaluation, media exposure, party id (dem, rep dummy variables), ideology, civic skills, 2008 vote, efficacy, age, marital status.

\* p < .10, \*\* p < .05, \*\*\* p < .01

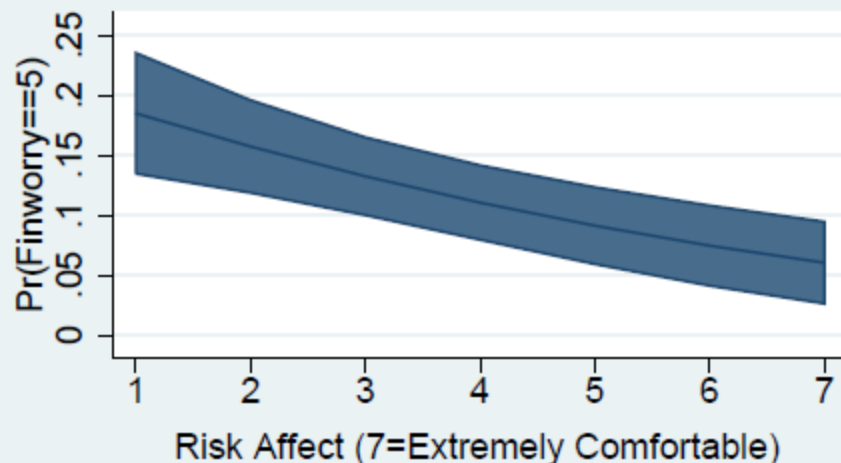
# Financial Worry and Prospective Evaluation

## List vs. Branched

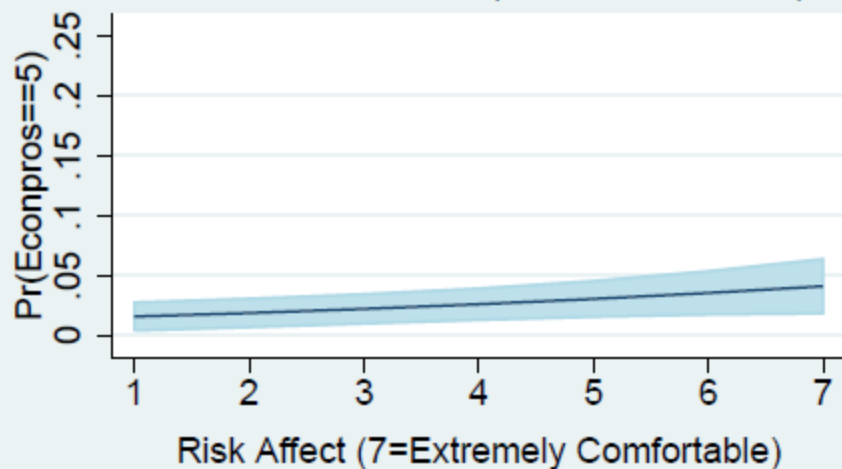
### Fin Worry - List (5=Extremely)



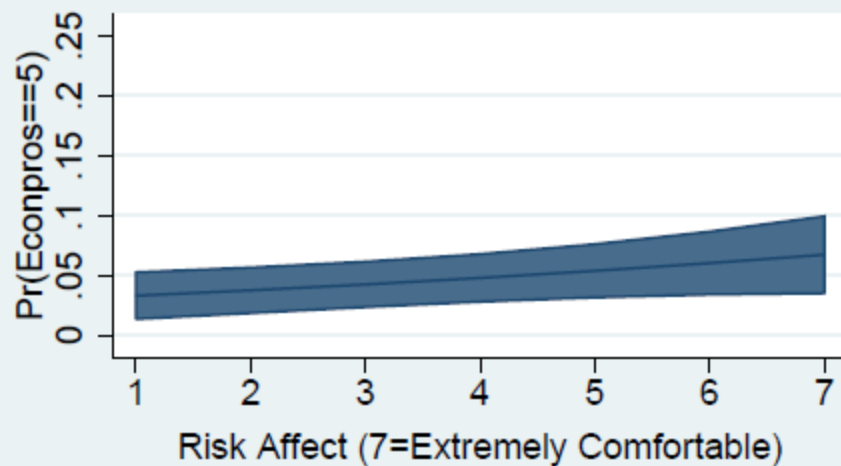
### Fin Worry - Branched (5=Extremely)



### Econ Eval - List (5=Much Better)



### Econ Eval - Branched (5=Much Better)



# Policy: List vs. Branch

- Govt Jobs (+):
  - 1=Intervention
  - 7=No Intervention
- Healthcare (-):
  - 1=Oppose
  - 7=Support

Table 11. Government Jobs and Healthcare, List vs. Branched

|  | Govt Jobs L        | Govt Jobs B        | Healthcare L        | Healthcare B        |
|--|--------------------|--------------------|---------------------|---------------------|
| Risk L   | .111 ***<br>(.041) |                    | -.049<br>(.041)     |                     |
| Risk B   |                    | .003<br>(.034)     |                     | -.081 **<br>(.034)  |
| Econ Retro   | -.089<br>(.066)    | -.086<br>(.069)    | .222 ***<br>(.066)  | .032<br>(.070)      |
| Econ Pros  | .033<br>(.075)     | -.061<br>(.071)    | .138 **<br>(.070)   | .211 ***<br>(.075)  |
| Democrat   | -.275 **<br>(.137) | -.238<br>(.148)    | .356 ***<br>(.129)  | .463 ***<br>(.149)  |
| Republican   | .226 *<br>(.132)   | .047<br>(.154)     | -.432 ***<br>(.153) | -.211<br>(.156)     |
| Ideology   | .192 ***<br>(.039) | .178 ***<br>(.042) | -.255 ***<br>(.046) | -.226 ***<br>(.039) |
| Efficacy   | -.042<br>(.066)    | .042<br>(.078)     | .179 ***<br>(.068)  | .184 ***<br>(.067)  |
| Interest   | -.013<br>(.052)    | .063<br>(.060)     | -.130 **<br>(.055)  | -.102 *<br>(.059)   |
| Income   | .034 **<br>(.015)  | .032 **<br>(.015)  | .028 **<br>(.013)   | .017<br>(.014)      |
| <i>-----Cutpoints and other controls omitted -----</i> |                    |                    |                     |                     |
| Wald Test  | 8.59 ***           | 5.79 ***           | 8.82 ***            | 11.4 ***            |
| N  | 0                  | 0                  | 0                   | 0                   |
|  | 565                | 535                | 618                 | 570                 |

Source: ANES 2010-2012 Evaluations of Government and Society Study

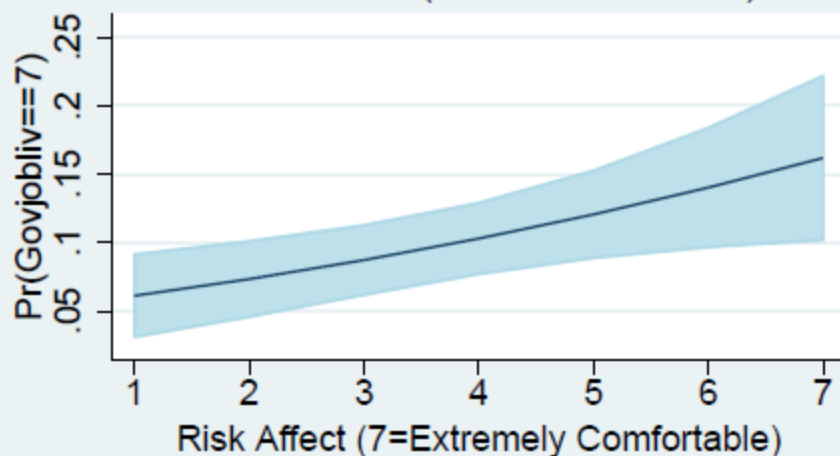
Note: Coefficients are (weighted) ordered probit estimates with standard errors in parentheses. Demographic controls (not shown) include media exposure, civic skills, 2008 vote, gender, age, marital status, education, and race (black, Hispanic, other minority).

\* p < .10, \*\* p < .05, \*\*\* p < .01

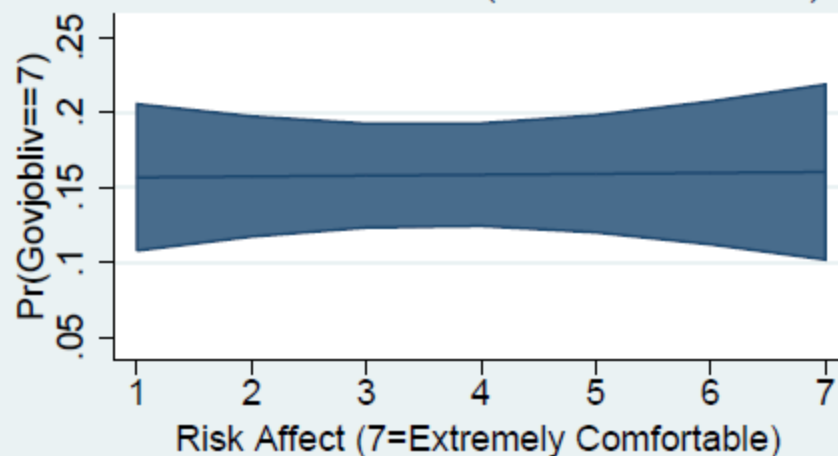
# Government Jobs and Healthcare Support

## List vs. Branched Risk Affect

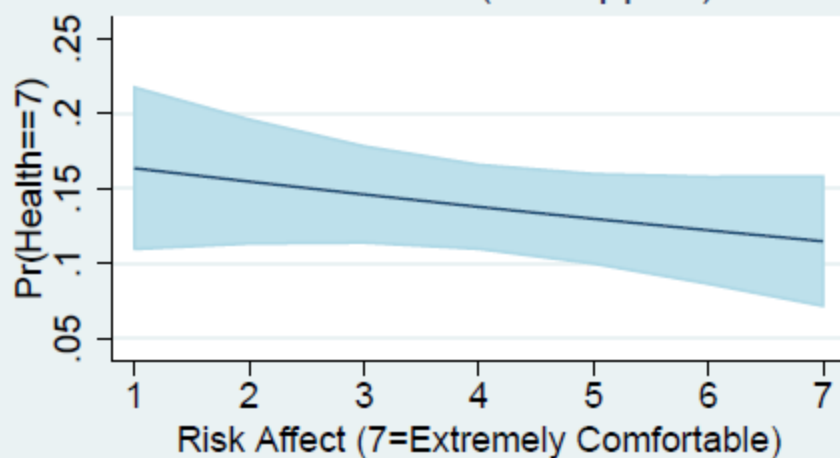
Govt Jobs - List (7=Each on own)



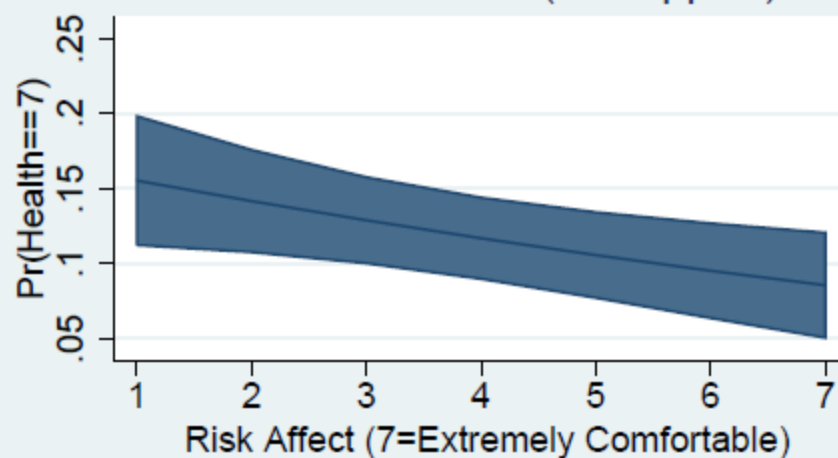
Govt Jobs - Branched (7=Each on own)



Healthcare - List (7=Support)



Healthcare - Branched (7=Support)





# Conclusions

---

- Single item risk orientation measure useful & cheap in terms of space
- List version produces results similar to multi-item scales in many but not all cases
- Branched magnifies extremes of scale; List is more similar to multi-item scales
- Both predict wide variety of outcomes