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Public Expenditure and Agricultural Growth: The Case of Social Protection in Asia

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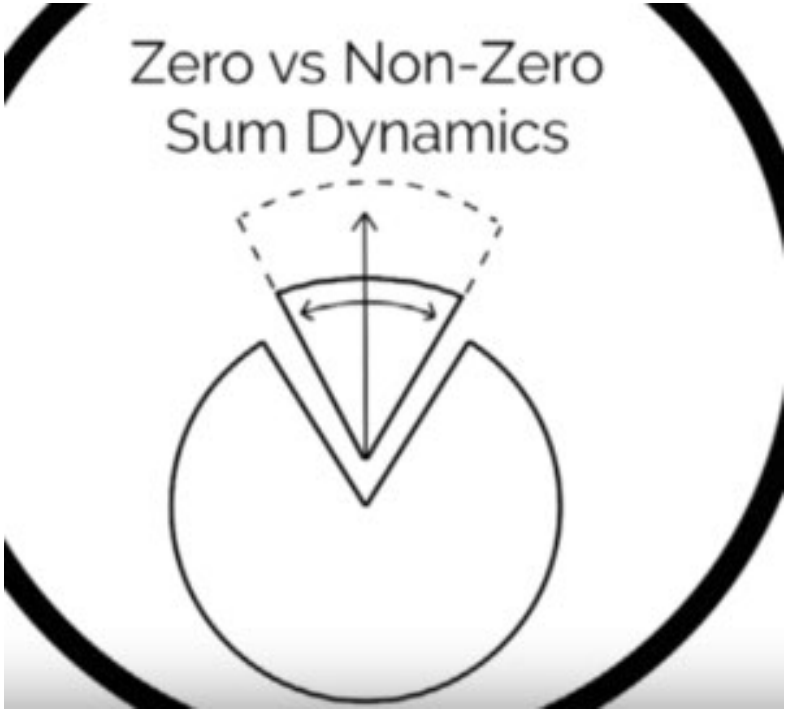
In a nutshell



- Social protection is not a zero-sum game, it can fuel growth in the economy.
- Higher effects are observed for countries that direct higher amounts of social protection expenditure to the poorest.

Can SP fuel growth?

- **Micro level:** SP provides a temporary and partial remedy for missing markets for credit and insurance, especially in rural areas
  - Eases liquidity constraints
  - Eases risk constraints
- **Meso level:**
  - Build up community infrastructure
  - Generate multiplier effects in the local economy
- **Macro level:**
  - First order effects through increased consumption
  - Second order effects are channeled through increased labor productivity

Our approach

- We take a sectoral approach by focusing on how social protection expenditure impacts agricultural GDP growth
- We test whether social protection can act as a shock absorber by mitigating the negative effects of extreme weather events on agriculture GDP

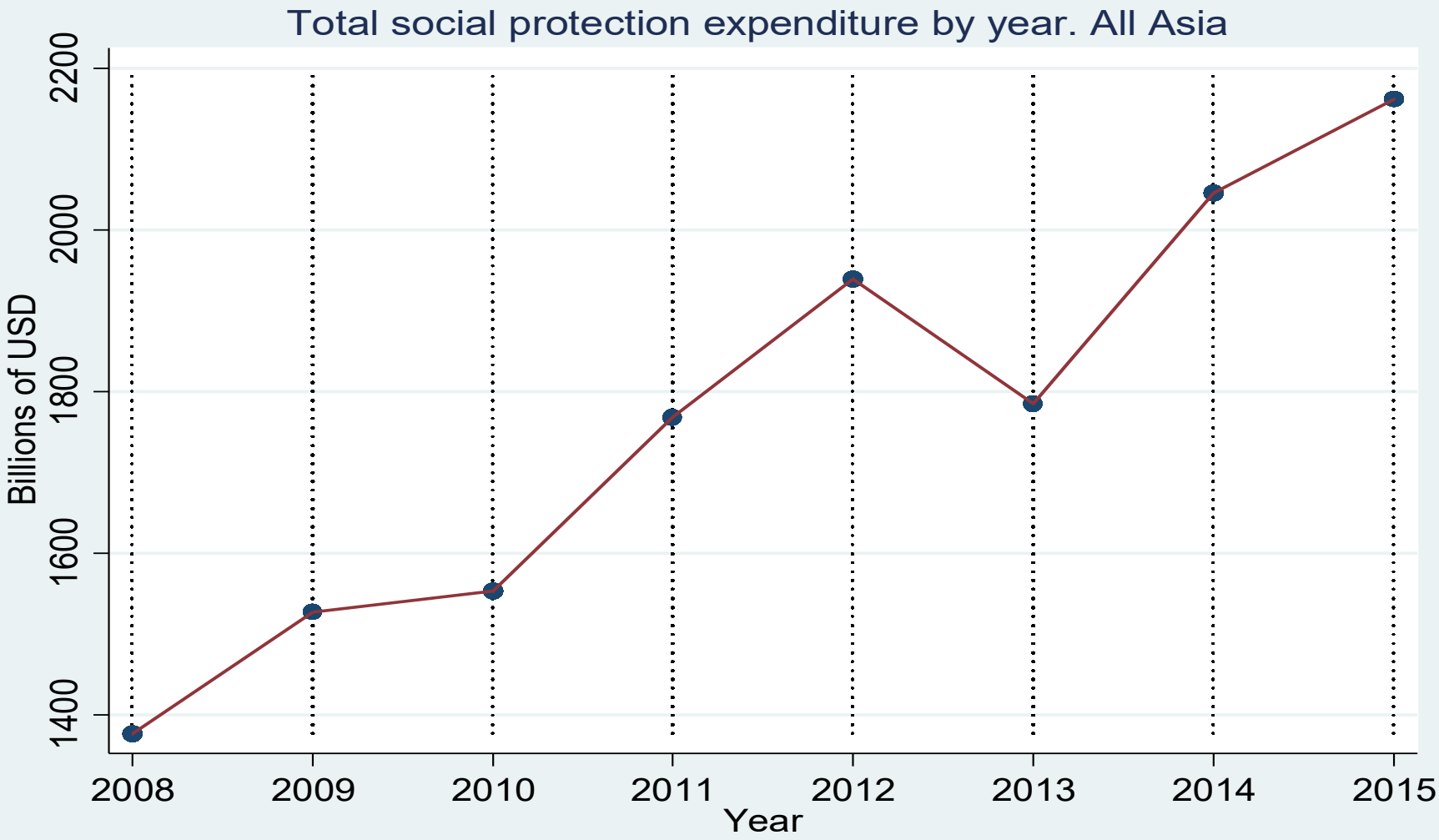
Data

- Recently released cross-country longitudinal dataset covering 38 Asian countries between 2008-2015 (ADB, 2019)
- Government expenditure on social protection
  - social assistance (ESA)
  - social insurance (ESI)
  - labor market programs (ALMP)
  - Social protection expenditure for the poor
- World Development Indicators
  - agricultural GDP (AGDP), debt to GDP ratio, population growth, interest rates , trade openness
- Emergency Events database (EM-DAT)
  - Extreme temperatures

Descriptive analysis

	Share of GDP (%)	
All Asia	2008	2015
ESI	2.13	3.32
ESA	0.95	1.34
ALMP	0.08	0.21
SPEP	2.26	2.15
AGDP	15.32	14.04
Lower-income		
ESI	1.13	2.71
ESA	1.06	1.29
ALM	0.10	0.24
SPEP	0.12	0.29
AGDP	19.92	18.18
Higher-income		
ESI	3.71	4.28
ESA	0.79	1.52
ALMP	0.05	0.15
SPEP	4.30	4.80
AGDP	6.15	5.83

Descriptive analysis



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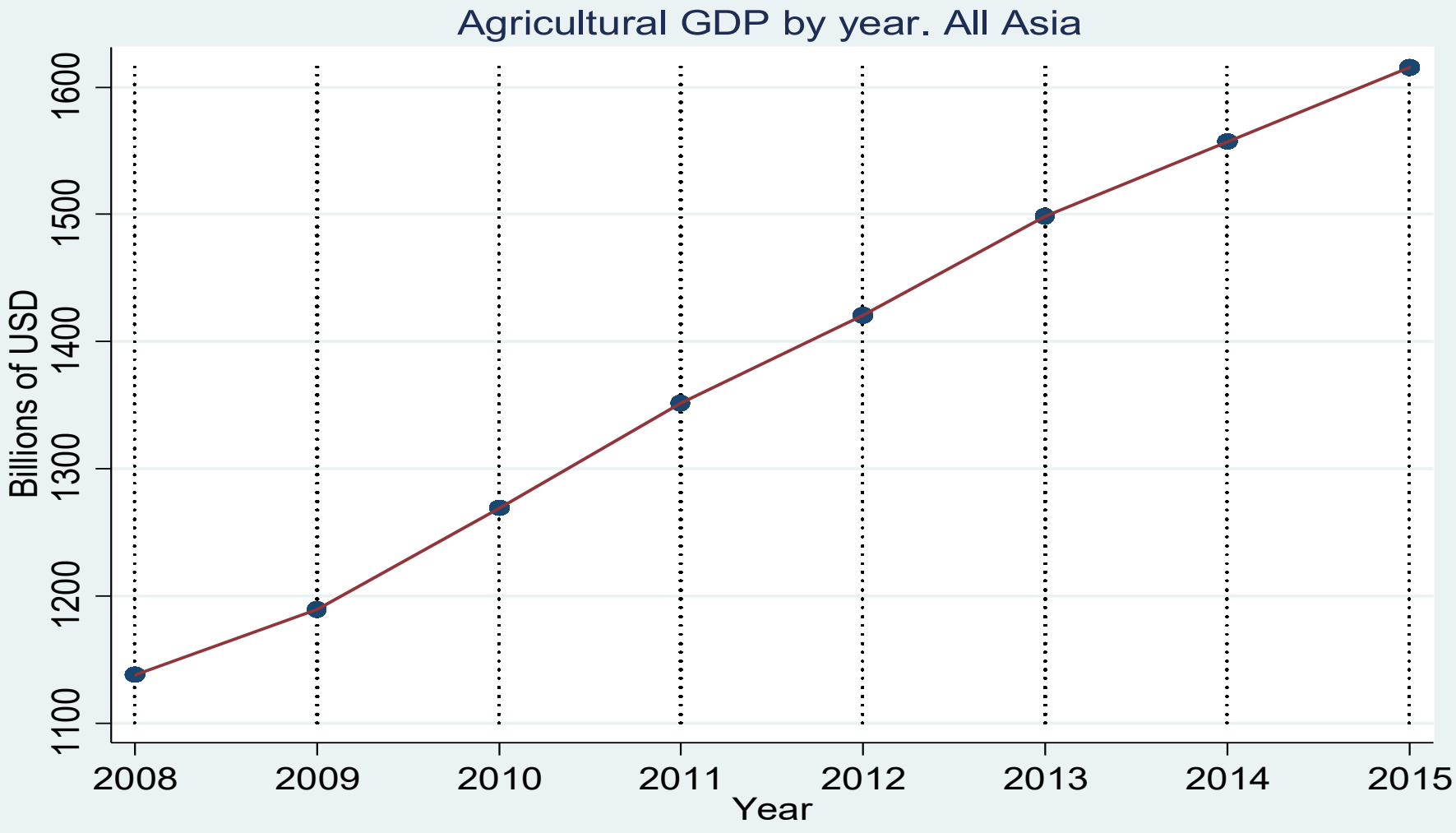

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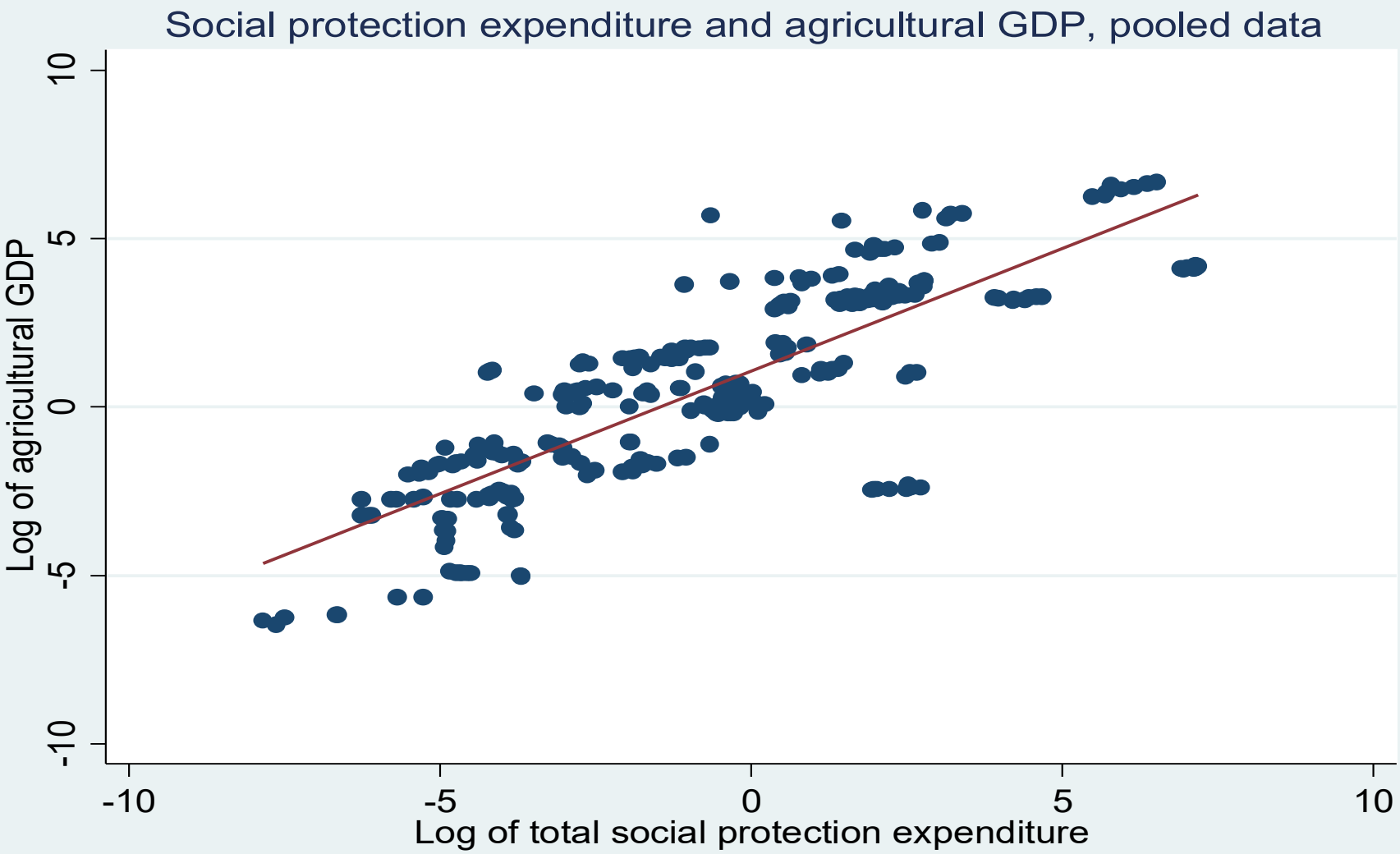

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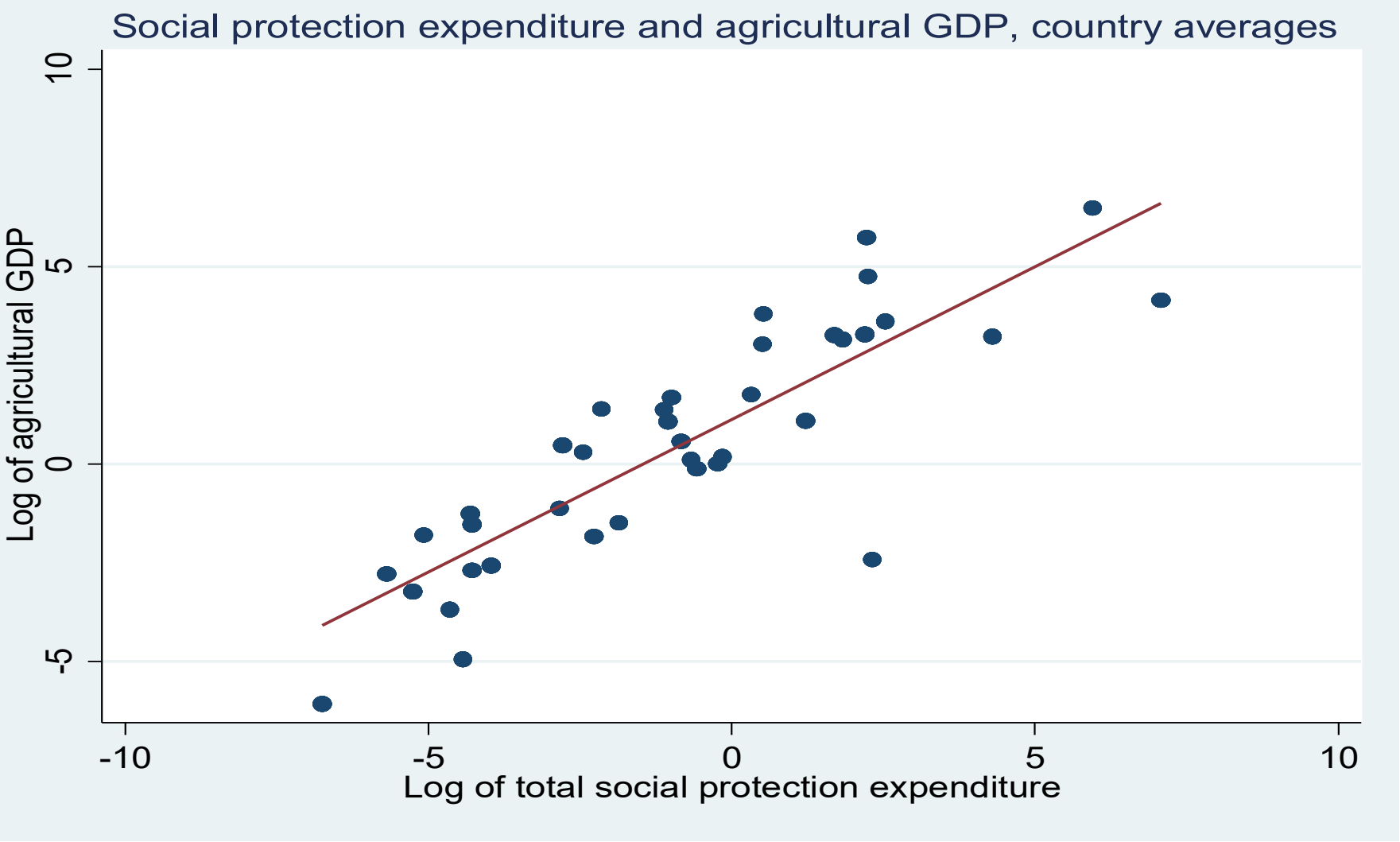

Estimation approach

Dynamic growth regression

$$\Delta y_{it} = y_{it} a_i + b_t + \beta \Delta y_{t-1} + \sum_{j=0}^{1} \delta_j \Delta SPE_{i,t-j} + \gamma' X_{it} + \varepsilon_{it} \quad (2)$$

Interactions to capture the buffering role of SP

$$\Delta y_{it} = a_i + b_t + \beta \Delta y_{t-1} + \sum_{j=0}^{1} \delta_j \Delta SPE_{i,t-j} + \mu Shock_t + \lambda \Delta SPE_t \cdot Shock_t + \gamma' X_{it} + \varepsilon_{it}$$

Results

Effects of social protection expenditure: all Asia, FE

	SPE	SPEP	ESA	ESI	ALM
Social spending$_t$	0.0196*	0.00256	-0.00361	0.00275	0.00109
	(1.81)	(0.30)	(-0.85)	(0.54)	(0.15)
Social spending$_{t-1}$	0.00694	0.0107	-0.00213	-0.00361	-0.00196
	(0.53)	(1.41)	(-0.69)	(-0.54)	(-0.29)

Effects of social protection expenditure: all Asia, FE-IV

	SPE	SPEP	ESA	ESI	ALM
Social spending$_t$	0.0356	0.00839	-0.00397	0.00870	-0.0104
	(1.01)	(0.34)	(-0.58)	(0.34)	(-0.63)
Social spending$_{t-1}$	0.0146	0.0124	-0.00227	-0.000706	-0.00807
	(0.68)	(0.92)	(-0.44)	(-0.05)	(-0.75)

Results by income level: FE

	SPE	SPEP	ESA	ESI	ALM
Lower-income					
Social spending$_t$	0.0169	0.00210	-0.00897	0.00132	-0.000107
	(1.59)	(0.15)	(-1.22)	(0.26)	(-0.01)
Social spending$_{t-1}$	0.00342	0.00903	-0.00769	-0.00204	-0.00314
	(0.29)	(0.91)	(-1.08)	(-0.33)	(-0.36)
Higher-income					
Social spending$_t$	0.0581**	0.0186	0.00689***	0.00414	0.0406
	(2.38)	(1.54)	(3.54)	(0.34)	(0.91)
Social spending$_{t-1}$	0.0638**	0.0380*	0.00792*	0.00405	-0.00610
	(2.61)	(3.00)	(2.35)	(1.99)	(1.91)

Results by income level: FE-IV

	SPE	SPEP	ESA	ESI	ALM
Lower-income					
Social spending$_t$	.	0.0302	-0.0145	-0.00541	-0.00428
	(0.87)	(1.00)	(-1.26)	(-0.50)	(-0.26)
Social spending$_{t-1}$	0.00641	0.0133	-0.00931	-0.00513	-0.00548
	(0.33)	(0.80)	(-1.23)	(-0.57)	(-0.49)
Higher-income					
Social spending$_t$	0.107	0.0362	0.00855	-0.000454	-0.0308
	(1.52)	(1.09)	(1.01)	(-0.06)	(-0.55)
Social spending$_{t-1}$	0.0887*	0.0470*	0.00885	0.00223	-0.0138
	(1.84)	(1.67)	(1.15)	(0.10)	(-0.56)

Cushioning effects of SP: FE

All Asia	SPE	SPEP	ESA	ESI	ALM
xtreme Temperature* ocial spending$_t$	0.0329	0.0338*	-0.00255	-0.00323	-0.0224
	(0.80)	(2.01)	(-0.42)	(-0.35)	(-1.86)
Lower-income					
xtreme Temperature* ocial spending$_t$	0.00189	0.175	-0.00347	-0.000109	-0.021
	(0.04)	(1.11)	(-0.48)	(-0.02)	(-1.26)
Higher-income					
xtreme Temperature* ocial spending$_t$	0.582***	0.970***	0.202***	4.417***	0
	(4.39)	(11.81)	(7.37)	(13.11)	(.)

Cushioning effects of SP: FE-IV

All Asia	SPE	SPEP	ESA	ESI	ALM
Extreme Temperature* Social spending$_t$	0.0349	0.0289	-0.00415	0.00182	-0.0344
	(0.36)	(0.65)	(-0.35)	(0.09)	(-1.54)
Lower-income					
Extreme Temperature* Social spending$_t$	0.00232	0.181	-0.00427	-0.0117	-0.0408*
	(0.02)	(0.77)	(-0.22)	(-0.58)	(-1.83)
Higher-income					
Extreme Temperature* Social spending$_t$	0.468	0.963	0.195	4.233	0
	(0.91)	(1.45)	(1.18)	(1.36)	(.)

Conclusions

- Fiscal stimulus channeled through social protection programs could stimulate the rural economy and cushion the negative impacts of extreme temperature on sectoral growth.
- Impacts are heterogeneous across countries and are driven by specific types of social protection interventions.
  - Larger shares of social protection expenditure targeted to the poor translate into higher growth rates in agriculture.
- SP alleviates bottlenecks that prevent groups of households from participating in and benefiting from the market economy.

Thank you!