Income Shocks and their Transmission into Consumption

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Do Households Smooth Consumption?

Key for understanding

- How families cope with adverse events
- Designing government insurance or other income support policies
- Understanding the transmission of business cycles and monetary policy

Three methods are used

1. Structural methods
2. Natural experiments
3. Ask people!

Early Structural Approaches

Early work focused on testing implications of some structural models

- Permanent income hypothesis (self insurance)
  - Hall and Mishkin (1982), Deaton and Paxson (1994)

- Complete-markets model (full insurance)
  - Cochrane (1991), Attanasio and Davis (1996)

Conclusion: Rejection of both models. BUT, the data show households have *some* insurance.

  - Recent work has focused on measuring the degree of insurance.

Structural Methods: Covariance Restrictions

Foundational paper: Blundell, Pistaferri, and Preston (2008)

- Income follows a permanent-transitory process:

$$\Delta y_{it} = \nu_{it}^{k} + \Delta u_{it}^{k}$$

- Consumption follows a random walk

$$\Delta c_{it} = \phi_t \nu_{it}^{k} + \psi_t u_{it}^{k}$$

Passthrough parameters are identified by covariance restrictions:

$$\phi_t = \frac{Cov(\Delta c_{it}, \Delta y_{it-1} + \Delta y_{it} + \Delta y_{it+1})}{Cov(\Delta y_{it}, \Delta y_{it-1} + \Delta y_{it} + \Delta y_{it+1})}$$

$$\psi_t = \frac{Cov(\Delta c_{it}, \Delta y_{it+1})}{Cov(\Delta y_{it}, \Delta y_{it+1})}$$

Structural Methods: Extensions

The nature of insurance

- Generalized income process
    - Blundell, Low, and Preston (2013)
- Endogenous labor
    - Blundell, Pistaferri, and Saporta-Eksten (2016)
- Intra-family insurance and bargaining
    - Theloudis (2017)
- Sign and size of income shocks
    - Ghosh and Theloudis (2023)

Fully specified models

- Can be used in counterfactual analysis

Structural Methods: Findings

Study	Pass-through perm.	Pass-through trans.	MPC perm.	MPC trans.	Variables Y_{it}^k	Variables C_{it}	Data
Alan et al. (2018)	0.05–0.69				thy	food	P 1999-2009
Arellano et al. (2017)[a]			0.2–0.4	-0.4–0.2	thy	nde	P 1999-2009
Arellano et al. (2024)[b]			0.33		dhy	nde	P 2005-17
Blundell et al. (2008)	0.64	0.05			dhy	nde	P & C 1980-92
Blundell et al. (2016)	0.32	-0.14			mhw	nde	P 1999-2009
	0.19	-0.04			fhw	nde	P 1999-2009
Blundell et al. (2018)	0.39	0.12			mhw	nde	P 1999-2015, and
	0.35	0.13			fhw	nde	C & A 2003-15
Busch and Ludwig (2021)[c]	0.40	0.05	0.38	0.05	dhy	n/a	P 1977-2012
Chopra (2023)	0.29 r	-0.18 r	0.19 r		mhw	nde	P 1977-2016
	0.31 x	-0.26 x	0.12 x		mhw	nde	P 1977-2016
Commault (2022)		0.6		0.32	dhy	nde	P & C 1980-92
Crawley (2020)	0.34	0.24			dhy	nde	P & C 1980-92
Crawley and Kuchler (2023)			0.64	0.64	dhy	te	D 2003-15
De Nardi et al. (2019)	0.54	0.12			dhy	nde	P 1968-92, and C 1980-2007
Ghosh and Theloudis (2023)[c]	0.13	-0.00			dhy	nde	P 1999-2019
Guvenen and Smith (2014)	0.45				dhy	nde	P & C 1968-92
Guvenen et al. (2023)[d]	0.38	0.11	0.4	0.05	dhy	nde	external estims
Heathcote et al. (2014)	0.39				mhw	nde	P 1968-2007, and C 1980-2006
Hryshko and Manovskii (2022)	0.87 sn	0.07 sn			dhy	nde	P & C 1980-92
	0.46 dg	0.12 dg			dhy	nde	P & C 1980-92
Jessen and König (2023)	0.62				mhw	n/a	P 1970-1997
Kaplan and Violante (2010)	0.78	0.06			dhy	nde	P 1980-92, SCF
Low et al. (2010)[e]	0.56				mhw	n/a	P 1988-96, SIPP
Madera (2019)[d]	0.50	0.10			dhy	te	P 1999-2015
Theloudis (2021)	0.45	-0.03			mhw	nde	P 1999-2011
	0.27	-0.05			fhw	nde	P 1999-2011
Wu and Krueger (2021)	0.35	0.01			mhw	nde	P 1999-2009
	0.18	0.01			fhw	nde	P 1999-2009

Original Blundell, Pistaferri, Preston (2008)

- Permanent passthrough 0.64
- Transitory passthrough 0.05

These methods tend to find a relatively low consumption response to both permanent and transitory shocks.

Possible problems highlighted in

- Crawley (2020)
- Commault (2022)

Both find much higher response to transitory shocks

Limited exploration of heterogeneity, but evidence that liquidity matters– Crawley Kuchler (2023)

Natural Experiments

Compare one group who have received an income shock, such as a stimulus check, with a group that has not.

Two main challenges:

1. Find a suitable natural experiment
2. Find high-quality data on spending or consumption

The literature has boomed recently as more data becomes available

Overall, this literature suggests much higher consumption responses to transitory shocks than the structural approach.

- However, some evidence of publication bias– Havranek and Sokolova (2020)

Natural Experiments: Examples

Stimulus check in 2001, 2008, and the Pandemic

- Johnson et al. (2006) and Parker et al. (2013) made use of staggered payments. Find high marginal propensity to consume (MPC)
- Contested results. E.g. Misra and Surico (2014), Orchard et al. (2023)

Lotteries

- Fagereng et al. (2021) using Norwegian administrative data. First solid evidence on the intertemporal MPC.

Randomized Control Trial

- Boehm et al. (2022) one-time transfers of $300 on prepaid card. MPC of 0.23 in the first month.

Tax refunds

- Although anticipated, large consumption response. Smaller for payments.

Natural Experiments: Findings

Natural experiment study	**MPC**	Horizon	C_{it}	Data
Baker et al. (2023)	0.25−0.40	First weeks	te	SaverLife 2020
Boehm et al. (2022)	0.23	One Month	te	French RCT 2022
Fagereng et al. (2021)	0.35−0.71	First year	te	N 1993-2015
Gelman et al. (2023)	≈1.00	Perm. shock	te	FA 2013-16
Johnson et al. (2006)	0.2−0.40	Three months	nde	C 2001
Misra and Surico (2014)	0.43	Three months	nde	C 2001
	0.16	Three months	te	C 2008
Karger and Rajan (2020)	0.46	Two weeks	te	Facteus 2020
Misra et al. (2022)	0.29	A few days	te	Facteus 2020
Orchard et al. (2023)	≈ 0.3	Three months	te	C 2008
Parker et al. (2022)	0.05−0.16	Three months	nde	C 2020-21
Parker et al. (2013)	0.50−0.90	Three months	te	C 2008
Sahm et al. (2010)	≈0.3	One year	te	C 2008

Surveys

Ask people!

- Consumption data is very noisy => Natural experiments need large N
- Directly eliciting MPCs is much cheaper
- Where the evidence overlaps, it seems to agree
- You can ask about sign, size, reason, etc.

Examples

- Fuster et al. (2020) use the NY Survey of Consumer Expectations
- Bunn et al. (2018) and Christelis et al. (2019) explore sign of income shock
- Colarieti et al. (2024) ask about the iMPC over 4 quarters

Surveys: Findings

Elicitation survey study	**MPC**	Horizon	C_{it}	Data
Bunn et al. (2018)	0.14 (pos.) 0.64 (neg.)	One year	te	BoE survey 2011-14
Christelis et al. (2019)	0.20 (pos.) 0.24 (neg.)	One year	te	Dutch survey 2015
Colarieti et al. (2024)	0.16	One quarter	te	Authors' survey 2022-23
Fuster et al. (2020)	0.07 (pos.) 0.32 (neg.)	Three months	te	NY Fed SCE 2016-17
Jappelli and Pistaferri (2014)	0.48	Unspecified	te	SHIW 2010
Jappelli and Pistaferri (2020)	0.47	Unspecified	te	SHIW 2016

MPCs are negatively correlated with liquid wealth

Puzzles

1. Large MPC even for households with high liquid wealth
2. Front-loaded MPC that doesn't seem to be driven by durables
3. Little-to-no difference between anticipated and unanticipated shocks

- Find the full review at:

www.edmundcrawley.com