Online appendix:
"Economic Shocks and Conflict: Evidence from Commodity Prices" by Samuel Bazzi and Christopher Blattman

A Macroeconomic effects of price shocks 1

B Price shock data sources and construction..... 3

C Time series properties of prices and shocks 8

D Supplementary conflict and price shocks analysis 9

E References..... 11

A Macroeconomic effects of price shocks

The effect of price shocks on incomes is a crucial "first stage" relationship in the analysis of price shocks on conflict. We do not have complete and high quality measures of household incomes and government revenues. We first examine the effect on per capita income growth, using national accounts GDP data reported by the World Bank. We use the World Bank measure rather than the Penn World Tables measure because the former are based on weights using domestic rather than international prices and hence are more likely to reflect the tradeoffs that agents face in the domestic economy (Nuxoll 1994; Temple 1999). We also assess the impact on other macroeconomic outcomes available in the World Development Indicators (World Bank 2011), such as household and government consumption, though here the data for many developing countries are less complete.

Appendix Table 1 estimates the reduced-form relationship between shocks and per capita GDP growth. We estimate the effect of price shocks with and without year FE, country FE, or country-specific time trends. In the baseline in column 1

with country FE and country-specific time trends, price shocks are associated with a significant increase in contemporaneous growth in GDP per capita. The sum of the price shocks from *t* to *t-2* is around 65% of the mean growth rate across countries, implying a one standard deviation rise in export commodity prices increases GDP per capita by around one-quarter. Including year fixed effects in columns 2-4 dampens the overall impact and suggests that around one-third of the relationship between commodity price shocks and income growth is common across countries (within year). Nevertheless, in all specifications, price shocks have economically (if not always statistically) significant impacts on per capita GDP growth.

Columns 5-8 in Appendix Table 1 compare the growth effects of price shocks to rainfall shocks.[1] In all specifications, price shocks have larger positive and more robustly significant effects on growth.

Appendix Table 2 re-estimates columns 1-4 in Appendix Table 1 using disaggregated price shocks. The results show that annual and extractive commodity price shocks are driving the patterns observed in Appendix Table 1.[2]

Appendix Table 3 looks at the effect of these price shocks on the growth in (a) household consumption expenditures, (b) government consumption expenditures, and (c) GDP per capita for the same set of country-years for which (a) and (b) are observed. Column 1 shows that aggregate export price shocks have large positive effects on household consumption expenditure growth. The sum of shocks is around 41 percent of the average consumption growth rate. The overall effect of shocks is similar for government consumption expenditure growth. However, the timing of the effects is slightly different with the price shocks passing through more

[1] The rainfall terms are in levels rather than first differences for reasons discussed in Miguel and Satyanath (2011), Ciccone (2011), and Brückner and Ciccone (2011).

[2] In unreported results available upon request, we perform a set of robustness checks on the growth specifications in Appendix Table 1. These checks are identical to those used to evaluate the sensitivity of the main conflict specifications in the paper as deployed in Figures 1-6 and Table 6. Overall, the results are qualitatively unchanged. The same is true when examining the robustness of the disaggregated shocks specification in Appendix Table 2.

quickly to household than government expenditures. The *t-1* shock is more important than the *t-2* shock for households, but the reverse is true for government. Column 3 shows that the overall GDP per capita growth effects are similar for the subsample of countries with non-missing consumption data as for the full sample in Appendix Tables 1 and 2. Nevertheless, with all of these results, it is important to note that the data are missing for many of the poorest countries in our main analysis.

Appendix Table 4 repeats the exercise in Appendix Table 3 using disaggregated shocks. The results suggest that household and government consumption expenditures respond similarly to the different types of commodity price shocks. Unfortunately, the data on government revenue and non-consumption expenditures (e.g., on the military) are much more sparse and hence cannot be used reliably to assess differences across commodity types in the pass-through from export price shocks to income.

B Price shock data sources and construction

B.1 Construction

B.1.1 Commodity export price index

We construct the commodity export price index, P_{it}, as a geometrically-weighted index of real export prices for each country i in year t:

$$P_{it} = \frac{\prod_{j=1}^{J} p_{jt}^{w_{ij,t-k}}}{cpi_t}$$

To capture price fluctuations on international markets (as opposed to domestic or farm-gate prices), we use U.S. dollar-denominated prices in international markets, p_{jt}, for commodity j in year t (normalized to 1 in 2000). Since prices are dollar-denominated, we deflate the index by the US consumer price index, cpi_t.

Each commodity price is weighted by $w_{ij,t-k}$, its average share in total national

exports (excluding re-exports) from $t - 2$ to $t - 4$. Such time-varying weights can provide a sharper measure of the price shock. Note that this price index excludes manufactures, and so the weights, w, do not sum to one.

We use export weights because of the widespread availability of export data, as opposed to data on production levels or stocks. Thus the shocks measure may not accurately capture the effects of international price volatility on products produced and consumed domestically.

Some forms of analysis may require time-invariant weights. We also construct an index using 1980 fixed weights. We use the midpoint of the sample, 1980, because data are complete for nearly all countries in this year, and because initial export mixes in the 1950s are unrepresentative of export mixes over the full period (resulting in increasing measurement error and attenuation of the coefficient of interest).

B.1.2 Commodity export price shocks

We calculate the shock, S_{it}, using the log difference of the price index P_{it}, and scale it by a time-invariant measure of the importance of commodity prices in the economy: the ratio of the value of total commodity exports (X) to GDP at the midpoint of the period:

$$S_{it} = \left(\log P_{it} - \log P_{it-1}\right) \times \frac{X_{i\underline{T}}}{GDP_{i\underline{T}}}$$

To calculate X/GDP for each country i, we take the average of the ratio in the years 1978 to 1982, and the nearest five years to 1980 when all years are not available. In principle, this scaling increases the expected size and precision of any impact of prices on growth and political instability. We also construct a shock measure without this scaling.

B.2 Data

B.2.1 Commodity export weights (w)

A country's export weight of a particular commodity is defined as the share of that commodity in total exports (excluding re-exports). The sum of all commodity shares in a country is defined as the share of "primary products" in total exports, or *ppx* (where $\sum_j w_{ij} = ppx_i$). Along with the share of manufactured goods in exports, these commodity export shares sum would to one.

Primary products are classified according to SITC Revision 1 (SITC1) commodity codes: 0 (Food and live animals); 1 (Beverages and tobacco); 2 (Crude materials, inedible, except fuels); 3 (Mineral fuels, lubricants and related materials); 4 (Animal and vegetable oils and fats); 5 (Chemicals); 6 (Manufactured goods classified chiefly by material); 7 (Machinery and transport equipment); 8 (Miscellaneous manufactured articles); and 9 (Other commodities & transactions). We define primary products as all commodities under the one-digit commodity categories 0 to 4, as well as processed metals (category 68), diamonds (category 667), and gold (no SITC1 category, but category 97 in SITC2/3). Thus the share of primary products in exports (*ppx*) for a given country is the total share represented by these commodity categories.

For each country, we identify the share in exports of the 65 most common individual commodities, covering 100 SITC1 categories. These include: aluminum, asbestos, bananas, barley, beef, butter, cashews, coal, cocoa, coconut oil, coffee, copper, copra, cotton, diamonds, fish, fishmeal, fruit (other), gold, groundnut oil, groundnuts, hides, iron, jute, lamb, lead, linseed oil, live cattle, live sheep, live poultry, live swine, live animal (other), lumber, maize, manganese, meat (other), natural gas, nickel, olive oil, oranges, palm oil, pepper, petroleum, phosphates, pork, poultry, pulp, rice, rubber, shrimp, silver, sisal, sorghum, soybean, soybean meal, soybean oil, sugar, sunflower oil, tea, tin, tobacco, uranium, wheat, wool, and zinc.

The primary source of commodity trade data was extracted from the United Nations Commodity Trade Statistics Database (UN Comtrade) assembled by the United Nations Statistics Division (UNSD 2010). The database provides trade values by country, year, and commodity.

While all countries are represented to some degree in the UN Comtrade database, many countries are missing data for several years, especially before 1965. Missing data were first sought in the *UN Commodity Yearbook*, followed by regional statistical yearbooks (in Africa, first the *African Statistical Yearbooks*, and subsequently the *International Historical Statistics for Africa, Asia and Oceania*; in Latin America, first the *Statistical Abstract of Latin America* and subsequently the *International Historical Statistics for the Americas*; and for Asia the *International Historical Statistics for Africa, Asia and Oceania*). Remaining gaps were filled by resort to individual country statistical yearbooks and external trade accounts. Where available, we supplement with data from regional and country statistical yearbooks. These supplemental data were gathered at five-year intervals (e.g. 1955, 1960, ... , 2000) with intervening years geometrically interpolated. Where Comtrade gaps were less than five years in length, commodity shares were geometrically interpolated.

Finally, when export data are missing at the beginning of the period, such as 1955-1965, and no country statistical yearbook data are available, we use the earliest weights data available for preceding years (in a manner similar to using fixed midpoint weights).

Appendix Table 5 lists the top three primary commodities by country, with share in our price shock index. Potential "price-makers", using the 10% definition, are listed in Appendix Table 6.

B.2.2 Prices (p)

Prices are taken from world markets, typically from the US or (where not avail-

able) the UK, and are typically quoted on world markets in US dollars.[3] The primary source of price information is the IMF International Financial Statistics (IFS),[4] followed by the US Bureau of Labor Statistics (BLS), then Global Financial Data (GFD). Missing data was supplemented by data from the US Geological Survey (USGS), the US Department of Agriculture (USDA), WMC, Cashin (2000) and Cashin and McDermott (2002) (henceforth "Cashin"), and data received directly from various authors (Mlachila, Cashin, and Haines 2013; Manova and Zhang 2012; McMillan, Welch, and Rodrik 2003).[5] Note that the data may have been used

[3] If commodities had multiple price series pertaining to the different varieties of the product, a single price series was constructed; see worksheet "Master Series 2000" in the Data source file for additional details (available on request). Beef prices were calculated using a weighted average of Australian (2/3rd) and Brazilian (1/3rd) beef prices. Coconut oil prices were calculated using an average of two series of Philippines prices. Coffee prices were calculated using an average of Brazilian, Brazilian (U.S.), Ugandan, and Other coffee prices. Palm oil prices were calculated using an average of three series of Malaysian prices. Petroleum prices were calculated using an average of crude, Dubai, and U.K. prices. Rice prices were calculated using an average of two series of Thailand rice prices. Rubber prices were calculated by using an average of Thailand and Malaysian rubber prices. Sugar prices were calculated by using an average of Caribbean, U.S., and E.U. prices. Tea prices were calculated by using an average of U.S. and Sri Lankan prices. Lumber prices were calculated by using an average of two series of Malaysian timber prices. Tin prices were calculated by using an average of Bolivian, Thailand, and an additional series of tin prices. Wheat prices were calculated by using an average of U.S., Argentinian, and Australian wheat prices. Wool prices were calculated by using an average of three series of Australian wool prices. Zinc prices were calculated by using an average of Bolivian and an additional series of zinc prices. Miscellaneous meat prices were calculated by using an average of beef, lamb, and swine prices. Cashew prices were calculated as an average of 25 countries' price series. Lastly, Dairy prices were calculated using butter prices.

[4] IFS year-end data was used, except in a few instances in which annual data (i.e., averages calculated over a calendar year) was used; see worksheet "PRICES" in the Data source file for additional details (available on request).

[5] A number of commodities were missing prices for a small number of years, at either the start or the end of the time series; see the worksheet "Master Series 2000" in the Data source file for additional details (available on request). Missing prices for a commodity in specific years were interpolated by using price movements for the same commodity from the following alternate data sources: IFS banana prices by using Haines et al (2010) banana prices for 1957-1974; IFS barley prices by using GFD barley prices for 1957-1974; IFS Brazilian beef prices by using IFS Australian beef prices for 1957-1988; IFS coal prices by using GFD coal prices for 1957-1965 and 2005-2009; IFS coconut oil prices for one Philippines series by using IFS coconut oil prices for an alternate Philippines series for 1957-1964; IFS Brazil coffee prices by using IFS Brazil (U.S.) coffee prices for 1957-1973; IFS fish prices by using BLS fish prices for 1957-1978; IFS natural gas prices by using GFD natural gas prices for 1957-1984; IFS olive oil prices by using Cashin vegetable oil prices for 1957-1978; IFS orange prices by using GFD oil prices for 1957-1974; IFS palm oil prices for two Malaysian series by using IFS palm oil for an alternate Malaysian series for 1957-1959, 1967, and 1992; IFS pepper

in several papers by these authors, and that we used prices obtained directly from the authors rather than paper replication data from these specific papers mentioned. The papers cited here are merely indicators of one of the works arising from those data. Full price series and sources data are available from the authors on request.[6]

B.2.3 Commodity exports as a share of GDP (X/GDP)

Export values (*X*) come from the UN Comtrade database as the export shares (UNSD 2010). GDP comes from the World Development Indicators (World Bank 2009).

C Time series properties of prices and shocks

An important question is whether the underlying commodity prices in our three commodity groups (annual, perennial, extractive) vary in the degree of persistence.[7]

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prices by using GFD pepper prices for 1957-1982; IFS poultry prices by using BLS slaughter poultry prices for 1957-1980; IFS pulp prices by using BLS pulp prices for 1957-1969; IFS rice prices for one Thailand series by using IFS rice prices an alternate Thailand series for 1957-1966; IFS Thailand rubber prices by using IFS Malaysian rubber prices for 1957-1966; IFS year end silver prices by using IFS annual silver prices for 1957-1967; IFS sugar prices for one U.S. series by using IFS sugar prices for an alternate U.S. series for 1957-1962; IFS Sri Lankan tea prices by using 2005 IFS Sri Lankan tea prices for 1957-1974; IFS year end timber hardwood prices by using 2005 annual IFS timber hardwood prices for 1957-1969; IFS Bolivian and Thailand tin prices by using an alternate IFS tin price series for 1957-1963 and 1957-1966, respectively; IFS tobacco prices by using USDA tobacco prices for 1957-1967; IFS uranium prices by using GFD uranium prices for 1968-1980 and a WMC Resources Ltd. report for 1957-1967; IFS Australia wheat prices by using IFS U.S. wheat prices for 1957-1964; IFS wool prices for one Australia series by using IFS wool prices for an alternate Australian series for 1957-1966 and 2005-2009; IFS Bolivian zinc prices by using an alternate IFS zinc price series for 1957-1963; IFS swine prices by using GFD live swine prices for 1957-1980; IFS sunflower oil by using Cashin vegetable oil for 1957-1960; Manova and Zhang manganese prices by using USGS manganese prices for 2003-2009; IFS gold prices using GFD gold prices for 1957-1963. Lastly, IFS diamond prices for 2003-2009 are held constant using 2002 IFS diamond prices.

[6] In the Data source file, the worksheet "Master Series 2000" draws data from the sources outlined above, creates price indices, interpolates missing data using price movements from alternate sources, and constructs single price series for commodities with multiple varieties of the same product. The worksheet "PRICES" presents these final price series, and serves as the input for the statistical analyses used in the paper.

[7] In results available upon request, we show that price shocks are negatively autocorrelated. The reason is that many changes are driven by short-term changes in world commodity supplies that

r below shows the p-values from 65 Phillips and Perron (1988) tests for whether the given (log) commodity price p_{jt} has a unit root. The test is quite flexible allowing for up to four lags and a time trend. Overall, the figure paints a picture that is consistent with the more comprehensive evidence in Ghoshray (2011). In particular, the persistence of shocks varies substantially across commodities. Moreover, aside from the persistence of oil and gas price shocks, there is not a systematic relationship between the type of commodity and the potential permanence of shocks. This suggests that the differences across commodity groups that we are ascribing to substantive economic forces (e.g., taxability) are not merely due to differences in time series properties.

D Supplementary conflict and price shocks analysis

D.1 Impacts of disaggregated shocks on conflict: Supplementary information

Appendix Tables 7 and 8 expand the results of Table 3 in the main paper, displaying estimated coefficients on the individual lags of the disaggregated shocks when regressed on conflict onset. Appendix Tables 9 and 10 do the same for Table 5 in the main paper, for conflict ending.[8]

D.2 Reconciling our findings with previous results

We reconcile our analysis to the BC results in Appendix Table 11, making changes cumulatively in Columns 1 to 8 until the results in Table 2 match standardized BC results (Column 8). We first note the sum of shocks is significant at only the 10 percent level in Column 8, and only the second lag is significant at the 5%

push prices temporarily out of long term equilibrium. Thus commodity price series often resemble a set of brief, unpredictable spikes interspersed by long, shallow troughs (Deaton and Laroque 1992; Deaton and Miller 1995).

[8] As noted in the paper, we also considered the effect of the price shocks on conflict onset and ending using a quadratic form and the absolute value of the shock, respectively. The results (available upon request) and conclusions are no different than those implied by the main tables.

level. Looking leftwards from the BC result in Column 8 to Columns 1 to 7, the BC result appears to be dependent on the sample of years (1983 onwards alone); the use of an instrumental variables estimator in *Stata* without making the usual small-sample adjustment in OLS; and a unique coding of the UCDP/PRIO war measure using an older version of the dataset. The results in Column 8 are largely due to these sample, estimation, and coding decisions, rather than small differences in the construction of the price indices (e.g. weighting methods or commodities included).

Because the size and significance of the BC result is especially dependent on the particular coding of the dependent variable, we also consider the robustness of the BC result to the usual alternative dependent variables. Columns 9 to 14 use the BC sample, estimator, and price shock, but vary the dependent variable. The sum of shocks is no longer significant at the 10% level in any of the columns, and the significance of the second lag of the price shock disappears. The current shock is significant at the 10% level for three of the six dependent variables.

D.3 Robustness analysis: An example

Recall that Figures 1 and 4 in the main paper illustrate the results of eleven different models for each of the 6 main conflict measures. For illustrative purposes, Appendix Table 12 displays the underlying robustness checks for one of the most robust dependent variables, UCDP/PRIO cumulatively high intensity warfare. The magnitudes of the sums of shocks are consistently large, but robustness is somewhat sensitive to simple model changes, especially the use of a more conservative price-maker threshold of 3%.

D.4 Battle deaths, further robustness checks

Appendix Table 13 reproduces Table 8 in the main paper, without the consumption shock. It displays static and dynamic models for both level and log battle deaths. The results are consistent with Table 8, though slightly less statistically significant (as hypothesized). Nonetheless, it gives us further reason for caution with

these results.

E References

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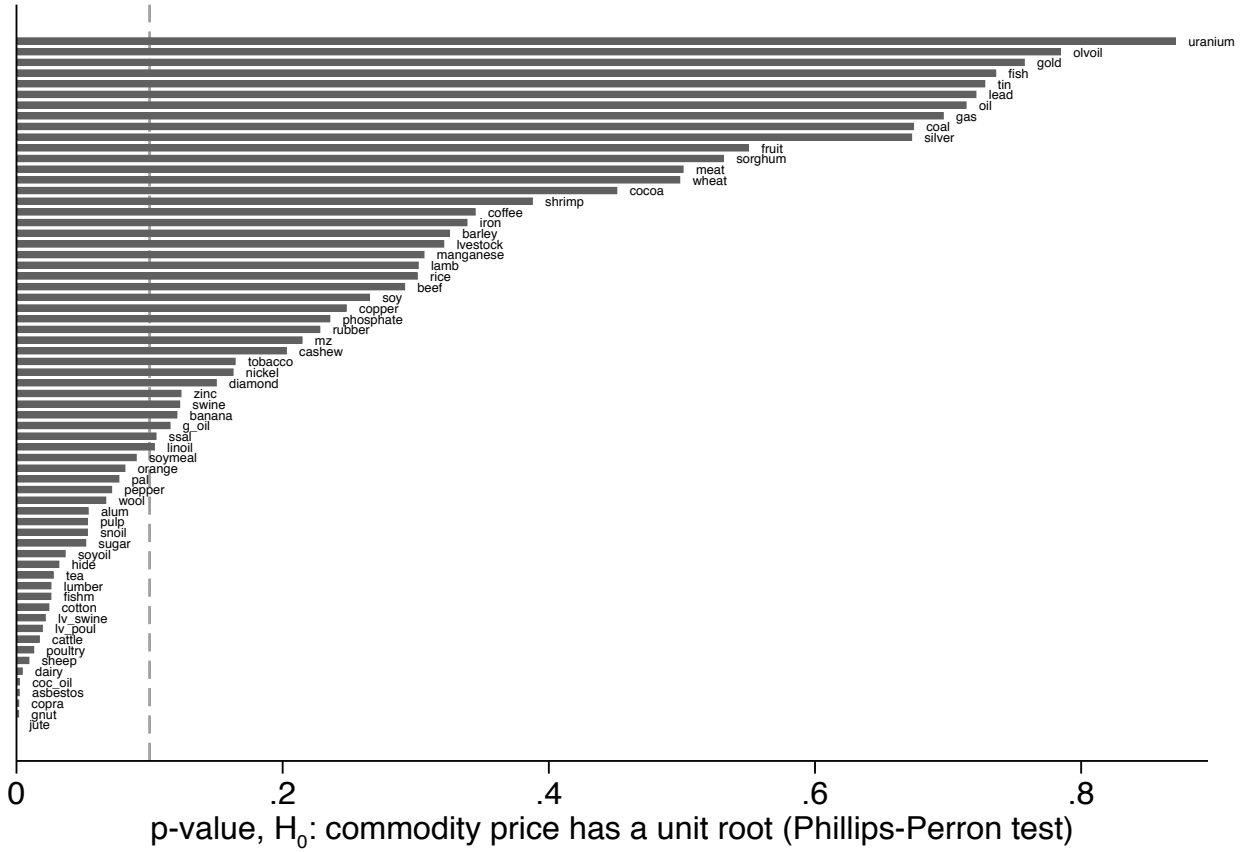
Figure 1: Testing for the Persistence of Commodity Prices



Notes: Each bar represents the p-value from a test of the null hypothesis that the given commodity has a unit root over the annual time horizon. The Phillips-Perron tests are based on a lag length of 4 and allow for a time trend.

Appendix Table 1: Aggregate Export Price shocks, Rainfall, and GDP per capita growth

	Income per capita growth rate †							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Covariate	All non-OECD countries							
Price Shock, t	0.0025	0.0013	0.0006	0.0014	0.0026	0.0007	0.0006	0.0008
	(0.0011)**	(0.0012)	(0.0012)	(0.0011)	(0.0014)*	(0.0015)	(0.0016)	(0.0014)
Price Shock, t-1	0.0054	0.0035	0.0029	0.0036	0.0059	0.0037	0.0035	0.0037
	(0.0013)***	(0.0015)**	(0.0015)**	(0.0014)**	(0.0015)***	(0.0017)**	(0.0018)*	(0.0017)**
Price Shock, t-2	0.0023	0.0006	0.0000	0.0007	0.0038	0.0019	0.0017	0.0019
	(0.0013)*	(0.0012)	(0.0013)	(0.0013)	(0.0012)***	(0.0012)*	(0.0013)	(0.0012)
Rainfall, t					0.0103	0.0075	0.0082	0.0058
					(0.0051)**	(0.0046)	(0.0048)*	(0.0046)
Rainfall, t-1					0.0021	0.0002	0.0007	-0.0018
					(0.0052)	(0.0047)	(0.0051)	(0.0047)
Rainfall, t-2					-0.0027	-0.0051	-0.0049	-0.0077
					(0.0044)	(0.0043)	(0.0046)	(0.0036)**
Country fixed effects	Yes	Yes	Yes	No	Yes	Yes	Yes	No
Year fixed effects	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Country-specific time trend	Yes	No	Yes	Yes	Yes	No	Yes	Yes
Sum of price shocks	0.0102	0.00542	0.00354	0.00568	0.0123	0.00631	0.00576	0.00635
p-value of sum	[0.0001]***	[0.064]*	[0.223]	[0.040]**	[0.000]***	[0.053]*	[0.109]	[0.034]**
Impact of price shocks (%Δ)	0.646	0.342	0.223	0.358	0.818	0.420	0.384	0.423
Sum of rainfall shocks					0.00973	0.00264	0.00399	-0.00360
p-value of sum					[0.269]	[0.684]	[0.627]	[0.451]
Impact of rainfall shocks (%Δ)					0.648	0.176	0.266	-0.240
Observations	4,276	4,276	4,276	4,276	3,970	3,970	3,970	3,970
R-squared	0.115	0.063	0.150	0.131	0.091	0.059	0.125	0.130
Number of Countries	113	113	113	113	108	108	108	108
Mean of Dependent Variable	0.0378	0.0378	0.0378	0.0378	0.0150	0.0150	0.0150	0.0150

Notes: All regressions are estimated by OLS. Data on rainfall are obtained from Dell et al (2012). Robust standard errors in parentheses, clustered by country.

† The dependent variable is the log change in GDP per capita (in constant USD) from the WDI (World Bank 2011)

*** p<0.01, ** p<0.05, * p<0.1

Appendix Table 2: Disaggregated Export price shocks and GDP per capita growth

	Income per capita growth rate †			
	(1)	(2)	(3)	(4)
Covariate	All non-OECD countries			
Annual Crop Price Shock, t	0.0035	0.0019	0.0012	0.0021
	(0.0017)**	(0.0017)	(0.0017)	(0.0016)
Annual Crop Price Shock, t-1	0.0072	0.0048	0.0042	0.0049
	(0.0017)***	(0.0019)**	(0.0019)**	(0.0019)**
Annual Crop Price Shock, t-2	0.0035	0.0010	0.0006	0.0011
	(0.0016)**	(0.0015)	(0.0016)	(0.0016)
Perennial Crop Price Shock, t	0.0002	-0.0013	-0.0018	-0.0013
	(0.0015)	(0.0016)	(0.0016)	(0.0015)
Perennial Crop Price Shock, t-1	0.0031	0.0012	0.0008	0.0014
	(0.0013)**	(0.0015)	(0.0015)	(0.0014)
Perennial Crop Price Shock, t-2	0.0003	-0.0011	-0.0016	-0.0010
	(0.0011)	(0.0010)	(0.0011)	(0.0010)
Mineral, Oil & Gas Price Shock, t	0.0040	0.0024	0.0012	0.0025
	(0.0015)***	(0.0017)	(0.0016)	(0.0016)
Mineral, Oil & Gas Price Shock, t-1	0.0078	0.0053	0.0043	0.0054
	(0.0020)***	(0.0022)**	(0.0022)*	(0.0022)**
Mineral, Oil & Gas Price Shock, t-2	0.0036	0.0011	0.0001	0.0012
	(0.0021)*	(0.0021)	(0.0021)	(0.0021)
Country fixed effects	Yes	Yes	Yes	No
Year fixed effects	No	Yes	Yes	Yes
Country-specific time trend	Yes	No	Yes	Yes
Sum of all annual crop shocks	0.0141	0.00764	0.00591	0.00809
p-value of sum	[0.000]***	[0.053]*	[0.131]	[0.034]**
Sum of all pereannial crop shocks	0.00364	-0.00123	-0.00259	-0.000923
p-value of sum	[0.263]	[0.719]	[0.464]	[0.755]
Sum of all oil and gas shocks	0.0154	0.00881	0.00555	0.00913
p-value of sum	[0.000]***	[0.046]**	[0.202]	[0.031]**
Observations	4,276	4,276	4,276	4,276
R-squared	0.117	0.067	0.154	0.134
Number of Countries	113	113	113	
Mean of Dependent Variable	0.0159	0.0159	0.0159	0.0159

Notes: All regressions are estimated by OLS. Data on rainfall are obtained from Dell et al (2012). Robust standard errors in parentheses, clustered by country.

† The dependent variable is the log change in GDP per capita (in constant USD) from the WDI (World Bank 2011).

*** p<0.01, ** p<0.05, * p<0.1

Appendix Table 3: Aggregated export price shocks and other macroeconomic outcomes

	Dependent variable		
	(1)	(2)	(3)
Covariate	Consumption	Consumption	Δ ln(GDP per capita)
Price Shock, t	0.0041	0.0018	0.0011
	(0.0025)	(0.0032)	(0.0014)
Price Shock, t-1	0.0068	0.0041	0.0056
	(0.0024)***	(0.0031)	(0.0018)***
Price Shock, t-2	0.0043	0.0097	0.0022
	(0.0023)*	(0.0031)***	(0.0014)
Sum of price shocks	0.0153	0.0156	0.00887
p-value of sum	[0.0115]**	[0.0169]**	[0.0234]**
Impact of price shocks (%Δ)	0.411	0.382	0.505
Observations	2,985	2,985	2,985
R-squared	0.110	0.122	0.205
Number of Countries	92	92	92
Mean of Dependent Variable	0.0371	0.0407	0.0176

Notes: All regressions use OLS with year fixed effects, country fixed effects, and country-specific time trends. All regressions are estimated by OLS. The dependent variables are obtained from WDI (World Bank 2011). Robust standard errors in parentheses, clustered by country.

*** p<0.01, ** p<0.05, * p<0.1

Appendix Table 4: Disaggregated export price shocks and other macroeconomic outcomes

	Dependent variable		
	(1)	(2)	(3)
Covariate	Δ ln(Household Consumption Expenditures)	Δ ln(Government Consumption Expenditures)	Δ ln(GDP per capita)
Annual Crop Price Shock, t	0.0063	0.0033	0.0021
	(0.0033)*	(0.0044)	(0.0018)
Annual Crop Price Shock, t-1	0.0070	0.0078	0.0065
	(0.0030)**	(0.0045)*	(0.0022)***
Annual Crop Price Shock, t-2	0.0053	0.0127	0.0031
	(0.0028)*	(0.0038)***	(0.0017)*
Perennial Crop Price Shock, t	0.0016	0.0011	-0.0004
	(0.0021)	(0.0024)	(0.0012)
Perennial Crop Price Shock, t-1	0.0053	0.0015	0.0035
	(0.0017)***	(0.0023)	(0.0013)**
Perennial Crop Price Shock, t-2	0.0010	0.0053	0.0004
	(0.0020)	(0.0027)*	(0.0012)
Mineral, Oil & Gas Price Shock, t	0.0066	0.0019	0.0022
	(0.0038)*	(0.0047)	(0.0019)
Mineral, Oil & Gas Price Shock, t-1	0.0109	0.0057	0.0089
	(0.0035)***	(0.0045)	(0.0026)***
Mineral, Oil & Gas Price Shock, t-2	0.0082	0.0151	0.0039
	(0.0036)**	(0.0046)***	(0.0021)*
Sum of all annual crop shocks	0.0186	0.0238	0.0117
p-value of sum	[0.001]***	[0.005]***	[0.007]***
Sum of all perennial crop shocks	0.00796	0.00787	0.00348
p-value of sum	[0.040]**	[0.092]*	[0.167]
Sum of all oil and gas shocks	0.0256	0.0227	0.0150
p-value of sum	[0.001]***	[0.007]***	[0.004]***
Observations	2,985	2,985	2,985
R-squared	0.112	0.123	0.208
Number of Countries	92	92	92
Mean of Dependent Variable	0.0371	0.0407	0.0176

Notes: All regressions use OLS with year fixed effects, country fixed effects, and country-specific time trends. All regressions are estimated by OLS. The dependent variables are obtained from WDI (World Bank 2011). Robust standard errors in parentheses, clustered by country.
*** p<0.01, ** p<0.05, * p<0.1

Appendix Table 5: Primary Commodity Export (Share of Total Exports)

Country	1st	2nd	3rd
Afghanistan	Gas (.3499)	Hide (.0900)	Cotton (.0599)
Algeria	Oil (.9160)	Gas (.0684)	Iron (.0018)
Angola	Oil (.7796)	Diamond (.1272)	Coffee (.0861)
Argentina	Wheat (.1028)	Soy (.0753)	Beef (.0676)
Bahamas	Oil (.9543)	Shrimp (.0035)	Iron (.0009)
Bahrain	Aluminum (.4536)	Tobacco (.0782)	Iron (.0313)
Bangladesh	Jute (.1827)	Tea (.0590)	Shrimp (.0479)
Barbados	Sugar (.3899)	Iron (.0104)	Meat (.0068)
Belize	Sugar (.6077)	Shrimp (.0493)	Banana (.0423)
Benin	Palm Oil (.3113)	Cotton (.2855)	Soymeal (.0453)
Bermuda	Oil (.4437)	Tobacco (.0005)	Soymeal (<0.0001)
Bolivia	Tin (.3742)	Gas (.2147)	Silver (.1142)
Brazil	Coffee (.1377)	Iron (.1214)	Soymeal (.0745)
Burkina Faso	Cotton (.4388)	Cattle (.1152)	Sheep (.0852)
Burundi	Coffee (.8899)	Hide (.0299)	Tea (.0199)
Cameroon	Oil (.3067)	Coffee (.2307)	Cocoa (.2204)
Cape Verde	Fish (.4604)	Banana (.1315)	Shrimp (.0711)
CAR	Lumber (.2877)	Coffee (.2739)	Diamond (.2522)
Chad	Cotton (.6000)	Cattle (.3300)	Shrimp (<0.0001)
Chile	Copper (.4911)	Fishml (.0502)	Lumber (.0452)
China	Poultry (.2399)	Rice (.0299)	Wheat (.0299)
Colombia	Coffee (.6012)	Sugar (.0499)	Oil (.0257)
Congo	Oil (.8958)	Diamond (.0402)	Lumber (.0242)
Costa Rica	Coffee (.2402)	Banana (.2079)	Beef (.0685)
Cuba	Sugar (.8363)	Nickel (.0464)	Shrimp (.0161)
DRC	Copper (.5199)	Poultry (.1599)	Coffee (.1299)
Dominica	Banana (.3248)	Orange (.0493)	Coconut Oil (.0399)
DR	Sugar (.4369)	Iron (.1455)	Coffee (.1096)
Ecuador	Oil (.6306)	Cocoa (.0852)	Banana (.0788)
Egypt	Oil (.6421)	Cotton (.1455)	Aluminum (.0241)
El Salvador	Coffee (.3758)	Cotton (.1210)	Oil (.0279)
Ethiopia	Coffee (.6399)	Hide (.1199)	Poultry (.0799)
Gabon	Oil (.8794)	Mangan (.0696)	Uranium (.0509)
Gambia	Groundnuts (.5382)	oundnut Oil (.2367)	Fish (.1030)
Ghana	Cocoa (.7730)	Aluminum (.1461)	Lumber (.0345)
Grenada	Cocoa (.4007)	Banana (.2438)	Fruit (.0166)
Guatemala	Coffee (.3164)	Cotton (.1159)	Sugar (.0640)
Guinea	Aluminum (.8000)	Coffee (.0199)	Cocoa (.0099)
Guinea-Bissau	Shrimp (.3199)	Groundnutst (.25)	Cashew (.0500)
Guyana	Aluminum (.4699)	Sugar (.3100)	Rice (.0900)
Haiti	Coffee (.4000)	Aluminum (.0900)	Sugar (.0299)
Honduras	Banana (.2866)	Coffee (.2550)	Beef (.0746)
India	Diamond (.0712)	Iron (.0661)	Tea (.0602)
Indonesia	Oil (.5869)	Gas (.1315)	Lumber (.0829)
Iran	Poultry (.9399)	Tobacco (<0.0001)	Beef (<0.0001)
Jamaica	Aluminum (.2124)	Sugar (.0589)	Oil (.0190)
Japan	Iron (.1193)	Copper (.0085)	Fish (.0052)
Jordan	Phosphates (.3929)	Orange (.0494)	Tobacco (.0425)
Kenya	Oil (.3336)	Coffee (.2218)	Tea (.1189)
Kuwait	Oil (.8554)	Gas (.0330)	Iron (.0023)
Laos	Lumber (.4600)	Coffee (.0799)	Tin (.0599)
Lebanon	Aluminum (.0399)	Tobacco (.0199)	Iron (.0199)
Lesotho	Wool (.0399)	Diamond (.0199)	Rice (<0.0001)
Liberia	Iron (.5197)	Rubber (.1711)	Lumber (.1213)
Libya	Oil (1)	--	--
Madagascar	Coffee (.5075)	Oil (.0534)	Shrimp (.0450)
Malawi	Tobacco (.4642)	Sugar (.1823)	Tea (.1362)
Malaysia	Oil (.2463)	Rubber (.1639)	Lumber (.1407)
Mali	Cotton (.6823)	Cattle (.1287)	Sheep (.0573)
Mauritania	Iron (.6899)	Shrimp (.0399)	Poultry (.0199)
Mauritius	Gold (1)	--	--
Mexico	Oil (.6275)	Gas (.0405)	Coffee (.0293)
Morocco	Phosphates (.3122)	Orange (.1202)	Oil (.0423)
Myanmar	Rice (.3899)	Lumber (.2399)	Gas (.0799)
Namibia	Uranium (.3400)	Diamond (.2300)	Fish (.0799)
Nepal	Hide (.2711)	Jute (.1532)	Lumber (.0532)
Nicaragua	Coffee (.4098)	Beef (.1414)	Cotton (.0747)
Niger	Uranium (.8299)	Cattle (.0700)	Poultry (.0099)
Oman	Oil (.9615)	Tobacco (.0024)	Fish (.0015)
Pakistan	Cotton (.1805)	Rice (.1676)	Oil (.0712)
Panama	Oil (.2315)	Sugar (.1973)	Banana (.1746)
Paraguay	Cotton (.3411)	Lumber (.1577)	Copra (.1454)
Peru	Oil (.2033)	Copper (.1935)	Lead (.1013)
Philippines	Sugar (.1145)	Coconut Oil (.0985)	Copper (.0954)
Rep. of Korea	Iron (.0946)	Fish (.0276)	Sugar (.0129)
Rwanda	Coffee (.5500)	Tea (.1599)	Tin (.0799)
Saudi Arabia	Oil (.9700)	Gas (.0216)	Silver (.0005)
Senegal	Oil (.1876)	Phosphates (.1633)	Fish (.1466)
Seychelles	Copra (.5156)	Fish (.3018)	Cashew (.0179)
Sierra Leone	Diamond (.5600)	Coffee (.1400)	Cocoa (.1099)
Singapore	Oil (.2486)	Rubber (.0794)	Palm_Oil (.0162)
Somalia	Livestock (.3178)	Sheep (.2604)	Cattle (.1876)
Sri Lanka	Tea (.3568)	Oil (.1539)	Rubber (.1498)
Sudan	Cotton (.4081)	Sorghum (.1441)	Sheep (.0686)
Suriname	Aluminum (.8700)	Rice (.0799)	Lumber (.0199)
Syria	Oil (.7885)	Cotton (.0824)	Tobacco (.0136)
Thailand	Rice (.1495)	Rubber (.0948)	Tin (.0870)
Togo	Phosphates (.4032)	Oil (.2593)	Cocoa (.1147)
Trinidad	Oil (.9239)	Sugar (.0078)	Gas (.0042)
Tunisia	Oil (.5248)	Olvoil (.0275)	Phosphates (.0244)
Turkey	Cotton (.1133)	Tobacco (.0803)	Sheep (.0335)
Uganda	Coffee (.9499)	Poultry (.0099)	Cotton (.0099)
Tanzania	Coffee (.2627)	Cotton (.0986)	Diamond (.0747)
Uruguay	Wool (.2088)	Beef (.1470)	Rice (.0606)
Venezuela	Oil (.9302)	Aluminum (.0207)	Iron (.0203)
Viet Nam	Poultry (.0599)	Rubber (.0599)	Rice (.0199)
Yemen	Poultry (.9200)	Cotton (.0199)	Shrimp (.0199)
Zambia	Copper (.8500)	Zinc (.0299)	Coal (<0.0001)
Zimbabwe	Iron (.2000)	Tobacco (.1599)	Asbest (.1000)

Appendix Table 6: Countries with at least a 10% export share, by commodity

Commodity	*at least 1 year, 1957-2007*	*1980*
Aluminum	Bahrain, Brazil, Mozambique	
Asbestos	Brazil, Kazakhstan, Zimbabwe	
Bananas	Columbia, Costa Rica, Cote d'Ivoire, Ecuador, Honduras, Jamaica, Philippines	Costa Rica, Ecuador, Honduras, Philippines
Barley	India, Kazakhstan	
Beef	Argentina, Brazil, India	
Butter		
Cashews	Brazil, Cote d'Ivoire, Ecuador, Ghana, India, Philippines, Sri Lanka, Tanzania, Vietnam	Brazil, Philippines, Sri Lanka
Coal	China, Indonesia, Vietnam	
Cocoa	Brazil, Cote d'Ivoire, Ghana, Indonesia, Malaysia, Nigeria	Brazil, Cote d'Ivoire, Ghana
Copra	Indonesia, Philippines, Sri Lanka	Philippines
Coffee	Brazil, Colombia, Vietnam	Brazil, Colombia
Copper	Chile, Indonesia, Peru, Zambia	Chile
Copra	Cote d'Ivoire, Indonesia, Malaysia, Papua New Guinea, Paraguay, Philippines, Singapore, Sri Lanka, Vietnam	Indonesia, Paraguay, Philippines
Cotton	Brazil, China, Egypt, India, Mexico, Pakistan, Turkey	
Diamonds	India	
Fish	China, Indonesia, Japan, South Korea, Vietnam	
Fishmeal	Chile, Peru	Chile, Peru
Gold	Ghana, Japan, South Korea	
Groundnut Oil	Argentina, Brazil, China, India, Nigeria, Senegal, Sudan	Argentina, Brazil, Senegal
Groundnuts	Argentina, China, India, Nigeria, Senegal, Sudan	
Hides	Argentina, Mexico, Vietnam	
Iron Ore	Brazil, India, Japan	Japan
Jute	Bangladesh, China, India, Myanmar Nepal, Thailand	Bangladesh
Lamb	Argentina, Ethiopia, India, Pakistan	
Lead	China, Kazakhstan, Mexico, Peru	Peru
Linseed Oil	Argentina, India	Argentina
Live Cattle	Argentina, Brazil, Mexico	
Live Poultry	China, Malaysia, Singapore	
Live Sheep	Iran, Jordan, Somalia, Sudan, Syria, Turkey	Turkey
Live Swine	China, Indonesia, South Korea	
Lumber	Brazil, Indonesia, Malaysia	Indonesia, Malaysia
Maize	Argentina, Brazil, China, India	
Manganese	Brazil, Gabon, Ghana, India, Kazakhstan, Mexico, Morocco, South Africa	Brazil, Gabon
Misc Meat	Argentina, Brazil	
Natural Gas	Algeria, Indonesia, Iran, Kuwait, Libya, Malaysia, Mexico, Nigeria, Qatar, Saudi Arabia, United Arab Emirates, Venezuela	Indonesia
Nickel	Botswana, Indonesia	
Olive Oil	Syria, Tunisia, Turkey	Tunisia
Oranges	Egypt, Mexico, Morocco	Morocco
Other Fruit	Costa Rica, Iraq, Mexico	
Other Animal	Brazil, Mexico, Niger, Somalia	
Palm Oil	Dem. Rep. of Congo, Indonesia, Malaysia, Nigeria, Singapore	
Pepper	Brazil, China, India, Indonesia, Malaysia, Singapore, Vietnam	Brazil, India, Indonesia, Malaysia, Singapore
Petroleum	Iran, Kuwait, Libya, Nigeria, Saudi Arabia, Venezuela	Saudi Arabia
Phosphates	China, Jordan, Morocco, Togo, Tunisia	Morocco
Poultry	Brazil, Thailand	Brazil
Pulp	Brazil, Indonesia	
Rice	Egypt, India, Japan, Myanmar, Pakistan, Thailand, Vietnam	Pakistan, Thailand
Rubber	Indonesia, Japan, Malaysia, Singapore, Thailand, Vietnam	Indonesia, Malaysia, Singapore
Shrimp	China, India, Indonesia, Japan, Mexico, Thailand, Vietnam	
Silver	Mexico, Peru, South Africa	
Sisal	Angola, Brazil, Kenya, Madagascar, Mexico, Tanzania	Brazil, Kenya, Tanzania
Sorghum	Argentina, Brazil, India	Argentina
Soybean Meal	Argentina, Brazil, India	Brazil
Soybean Oil	Argentina, Brazil	Brazil
Soybeans	Argentina, Brazil	
Sugar	Brazil, Cuba, India, Philippines	Cuba
Sunflower Oil	Argentina	Argentina
Swine	Brazil, Mexico	
Tea	China, India, Sri Lanka, Kenya	India, Sri Lanka
Tin	Bolivia, Brazil, China, Indonesia, Malaysia, Peru, Singapore, Thailand	Bolivia, Indonesia, Malaysia, Thailand
Tobacco	Brazil	
Uranium	Gabon, Namibia, Niger	Gabon
Wheat	Argentina, Kazakhstan	
Wool	Argentina, China, India, Kazakhstan, Peru	
Zinc	India, Kazakhstan, Mexico, Peru	

Appendix Table 7: The impact of disaggregated export price shocks on conflict and coup onset, without consumption shock
(Supplement to Table 3, showing disaggregated coefficients for Panel A)

	Dependent variable: Indicator for Onset							
	UCDP/PRIO Civil War			Other Civil War			Coups	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Covariate	Low	High Cum.	High	FL	S	COW	Archigos	PT
Annual Crop Price Shock, t	0.0002	0.0016	0.0014	0.0009	-0.0011	0.0028	0.0021	0.0019
	(0.0032)	(0.0023)	(0.0018)	(0.0015)	(0.0018)	(0.0023)	(0.0036)	(0.0034)
Annual Crop Price Shock, t-1	0.0050	0.0029	0.0005	-0.0013	-0.0024	0.0018	0.0006	0.0031
	(0.0061)	(0.0030)	(0.0013)	(0.0019)	(0.0022)	(0.0027)	(0.0054)	(0.0051)
Annual Crop Price Shock, t-2	-0.0011	-0.0020	-0.0017	0.0009	-0.0018	0.0032	-0.0045	-0.0109
	(0.0033)	(0.0018)	(0.0017)	(0.0014)	(0.0019)	(0.0024)	(0.0029)	(0.0044)**
Perennial Crop Price Shock, t	-0.0035	0.0020	0.0021	-0.0005	-0.0026	0.0005	0.0018	0.0002
	(0.0038)	(0.0021)	(0.0017)	(0.0031)	(0.0033)	(0.0035)	(0.0026)	(0.0032)
Perennial Crop Price Shock, t-1	0.0054	0.0008	0.0006	0.0023	0.0021	0.0032	-0.0055	-0.0009
	(0.0057)	(0.0018)	(0.0017)	(0.0029)	(0.0032)	(0.0028)	(0.0038)	(0.0044)
Perennial Crop Price Shock, t-2	0.0022	0.0031	0.0034	0.0022	-0.0006	-0.0010	-0.0028	0.0034
	(0.0036)	(0.0025)	(0.0024)	(0.0023)	(0.0023)	(0.0028)	(0.0043)	(0.0054)
Mineral, Oil & Gas Price Shock, t	0.0005	0.0031	0.0001	0.0011	-0.0003	0.0023	0.0008	0.0008
	(0.0035)	(0.0025)	(0.0023)	(0.0018)	(0.0021)	(0.0027)	(0.0035)	(0.0040)
Mineral, Oil & Gas Price Shock, t-1	0.0076	0.0015	0.0004	-0.0011	-0.0008	0.0040	-0.0038	-0.0031
	(0.0046)*	(0.0023)	(0.0018)	(0.0022)	(0.0024)	(0.0026)	(0.0042)	(0.0045)
Mineral, Oil & Gas Price Shock, t-2	-0.0035	-0.0014	-0.0007	0.0015	-0.0017	0.0021	-0.0065	-0.0081
	(0.0042)	(0.0021)	(0.0016)	(0.0016)	(0.0025)	(0.0027)	(0.0031)**	(0.0045)*
Annual crop shock								
Sum of all price shock coefficients	0.004	0.003	0.0002	0.001	-0.005	0.008	-0.002	-0.006
p-value of sum	0.593	0.541	0.965	0.839	0.205	0.127	0.813	0.357
Impact of shocks on risk (%Δ)	0.098	0.116	0.008	0.031	-0.245	0.268	-0.040	-0.097
Perennial crop shock								
Sum of all price shock coefficients	0.004	0.006	0.006	0.004	-0.001	0.003	-0.007	0.003
p-value of sum	0.513	0.162	0.087*	0.316	0.790	0.589	0.276	0.774
Impact of shocks on risk (%Δ)	0.097	0.269	0.321	0.227	-0.052	0.093	-0.136	0.045
Extractive crop shock								
Sum of all price shock coefficients	0.005	0.003	-0.0002	0.002	-0.003	0.008	-0.009	-0.010
p-value of sum	0.573	0.469	0.954	0.650	0.584	0.117	0.179	0.136
Impact of shocks on risk (%Δ)	0.108	0.146	-0.011	0.085	-0.134	0.292	-0.196	-0.173
Observations	4,106	4,352	4,748	4,088	4,092	4,398	4,647	5,079
R-squared	0.109	0.143	0.087	0.108	0.086	0.069	0.055	0.072
Number of Countries	117	117	117	114	117	116	114	117
Mean of Dependent Variable	0.042	0.022	0.019	0.018	0.021	0.029	0.047	0.059

Notes: All regressions use a linear probability model and include year fixed effects, country fixed effects, and country-specific time trends. Robust standard errors in parentheses, clustered by country. Dataset abbreviations are as follows: FL = Fearon and Laitin, S = Sambanis, COW = Correlates of war, and PT = Powell and Thyne.
*** p<0.01, ** p<0.05, * p<0.1

Appendix Table 8: The impact of disaggregated export price shocks on conflict and coup onset, with consumption shock
(Supplement to Table 3, showing disaggregated coefficients for Panel B)

	Dependent variable: Indicator for Onset							
	UCDP/PRIO Civil War			Other Civil War			Coups	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Covariate	Low	High Cum.	High	FL	S	COW	Archigos	PT
Annual Crop Price Shock, t	-0.0008	-0.0007	-0.0007	0.0020	-0.0003	0.0010	0.0048	0.0024
	(0.0033)	(0.0022)	(0.0016)	(0.0019)	(0.0022)	(0.0025)	(0.0044)	(0.0042)
Annual Crop Price Shock, t-1	0.0046	0.0008	-0.0007	-0.0017	-0.0027	0.0010	0.0043	0.0052
	(0.0066)	(0.0033)	(0.0016)	(0.0021)	(0.0025)	(0.0030)	(0.0063)	(0.0061)
Annual Crop Price Shock, t-2	-0.0007	-0.0047	-0.0041	0.0006	-0.0003	0.0040	-0.0016	-0.0093
	(0.0038)	(0.0019)**	(0.0018)**	(0.0017)	(0.0021)	(0.0025)	(0.0037)	(0.0045)**
Perennial Crop Price Shock, t	-0.0019	0.0024	0.0015	0.0009	-0.0021	-0.0010	0.0026	0.0009
	(0.0044)	(0.0022)	(0.0019)	(0.0036)	(0.0039)	(0.0041)	(0.0028)	(0.0037)
Perennial Crop Price Shock, t-1	0.0058	-0.0002	-0.0003	0.0032	0.0030	0.0028	-0.0036	-0.0005
	(0.0066)	(0.0019)	(0.0018)	(0.0033)	(0.0034)	(0.0029)	(0.0044)	(0.0052)
Perennial Crop Price Shock, t-2	0.0009	0.0009	0.0023	0.0017	-0.0003	-0.0004	-0.0014	0.0043
	(0.0034)	(0.0023)	(0.0022)	(0.0023)	(0.0025)	(0.0027)	(0.0041)	(0.0057)
Mineral, Oil & Gas Price Shock, t	-0.0001	0.0011	-0.0018	0.0032	0.0005	0.0002	0.0053	0.0017
	(0.0038)	(0.0026)	(0.0025)	(0.0025)	(0.0026)	(0.0029)	(0.0049)	(0.0050)
Mineral, Oil & Gas Price Shock, t-1	0.0082	0.0000	-0.0004	-0.0006	-0.0004	0.0047	0.0002	-0.0020
	(0.0048)*	(0.0024)	(0.0020)	(0.0024)	(0.0026)	(0.0033)	(0.0049)	(0.0058)
Mineral, Oil & Gas Price Shock, t-2	-0.0029	-0.0038	-0.0027	0.0010	-0.0009	0.0037	-0.0044	-0.0064
	(0.0047)	(0.0022)*	(0.0017)	(0.0017)	(0.0028)	(0.0028)	(0.0035)	(0.0047)
Annual crop shock								
Sum of all price shock coefficients	-0.001	-0.002	-0.006	-0.003	-0.005	-0.0002	0.007	-0.008
p-value of sum	[0.842]	[0.516]	[0.073]*	[0.360]	[0.155]	[0.970]	[0.487]	[0.314]
Impact of shocks on risk (%Δ)	-0.030	-0.104	-0.303	-0.159	-0.250	-0.006	0.141	-0.127
Perennial crop shock								
Sum of all price shock coefficients	0.004	0.007	0.004	0.005	0.001	-0.0004	-0.002	0.003
p-value of sum	[0.580]	[0.141]	[0.313]	[0.275]	[0.912]	[0.943]	[0.784]	[0.726]
Impact of shocks on risk (%Δ)	0.089	0.304	0.216	0.287	0.025	-0.013	-0.035	0.049
Extractive crop shock								
Sum of all price shock coefficients	-0.0004	0.000837	-0.007	-0.001	-0.008	-0.001	0.001	-0.015
p-value of sum	[0.943]	[0.829]	[0.059]*	[0.730]	[0.078]*	[0.815]	[0.871]	[0.092]*
Impact of shocks on risk (%Δ)	-0.010	0.0383	-0.364	-0.072	-0.377	-0.045	0.029	-0.252
Observations	4,106	4,352	4,748	4,088	4,092	4,398	4,647	5,079
R-squared	0.143	0.130	0.089	0.190	0.161	0.131	0.076	0.067
Number of Countries	117	117	117	114	117	116	114	117
Mean of Dependent Variable	0.042	0.022	0.019	0.018	0.021	0.029	0.047	0.059

Notes: All regressions use a linear probability model and include year fixed effects, country fixed effects, and country-specific time trends. Robust standard errors in parentheses, clustered by country. Dataset abbreviations are as follows: FL = Fearon and Laitin, S = Sambanis, COW = Correlates of war, and PT = Powell and Thyne.
*** p<0.01, ** p<0.05, * p<0.1

Appendix Table 9: The impact of disaggregated export price shocks on conflict ending, without consumption shock
(Supplement to Table 6, showing disaggregated coefficients for Panel A)

	Dependent variable: Indicator for ending					
	UCDP/PRIO Civil War			Other Civil War		
	(1)	(2)	(3)	(4)	(5)	(6)
Covariate	Low	High Cum.	High	FL	S	COW
Annual Crop Price Shock, t	-0.0006	0.0426	0.0664	-0.0214	-0.0223	0.0986
	(0.0259)	(0.0297)	(0.0655)	(0.0236)	(0.0217)	(0.0364)***
Annual Crop Price Shock, t-1	0.0091	0.0351	-0.0119	-0.0208	0.0133	0.1098
	(0.0390)	(0.0339)	(0.0807)	(0.0217)	(0.0254)	(0.0463)**
Annual Crop Price Shock, t-2	-0.0564	-0.0086	0.1676	-0.0035	-0.0202	0.0231
	(0.0359)	(0.0371)	(0.0667)**	(0.0176)	(0.0221)	(0.0514)
Perennial Crop Price Shock, t	0.0125	0.0359	0.0629	-0.0019	-0.0052	0.1118
	(0.0204)	(0.0200)*	(0.0329)*	(0.0173)	(0.0148)	(0.0276)***
Perennial Crop Price Shock, t-1	0.0231	0.0371	0.0366	-0.0033	-0.0023	0.0369
	(0.0198)	(0.0171)**	(0.0510)	(0.0131)	(0.0129)	(0.0353)
Perennial Crop Price Shock, t-2	-0.0241	0.0016	0.0905	-0.0117	-0.0181	0.0241
	(0.0216)	(0.0207)	(0.0352)**	(0.0139)	(0.0136)	(0.0317)
Mineral, Oil & Gas Price Shock, t	0.0133	0.0373	0.0373	-0.0239	-0.0247	0.0828
	(0.0268)	(0.0283)	(0.0680)	(0.0258)	(0.0211)	(0.0375)**
Mineral, Oil & Gas Price Shock, t-1	-0.0050	0.0407	-0.0393	-0.0143	0.0252	0.1269
	(0.0452)	(0.0369)	(0.0942)	(0.0241)	(0.0287)	(0.0453)***
Mineral, Oil & Gas Price Shock, t-2	-0.0466	0.0006	0.2078	-0.0042	-0.0212	0.0588
	(0.0400)	(0.0408)	(0.0773)**	(0.0199)	(0.0244)	(0.0551)
Annual crop shock						
Sum of all price shock coefficients	-0.047	0.069	0.222	-0.046	-0.029	0.232
p-value of sum	0.425	0.300	0.138	0.165	0.442	0.004***
Impact of shocks on risk (%Δ)	-0.297	0.631	0.871	-0.772	-0.331	1.213
Perennial crop shock						
Sum of all price shock coefficients	0.012	0.075	0.190	-0.017	-0.026	0.173
p-value of sum	0.778	0.029**	0.023**	0.597	0.364	0.005***
Impact of shocks on risk (%Δ)	0.071	0.682	0.745	-0.285	-0.291	0.905
Extractive crop shock						
Sum of all price shock coefficients	-0.038	0.079	0.206	-0.043	-0.021	0.268
p-value of sum	0.578	0.252	0.250	0.265	0.643	0.004***
Impact of shocks on risk (%Δ)	-0.238	0.718	0.807	-0.717	-0.235	1.406
Observations	995	749	353	1,013	907	665
R-squared	0.212	0.259	0.379	0.260	0.286	0.309
Number of Countries	83	52	42	56	61	59
Mean of Dependent Variable	0.161	0.109	0.255	0.087	0.080	0.191

Notes: All regressions use a linear probability model and include year fixed effects, country fixed effects, and country-specific time trends. Robust standard errors in parentheses, clustered by country. Dataset abbreviations are as follows: FL = Fearon and Laitin, S = Sambanis, COW = Correlates of war, and PT = Powell and Thyne.
*** p<0.01, ** p<0.05, * p<0.1

Appendix Table 10: The impact of disaggregated export price shocks on conflict ending, with consumption shock
(Supplement to Table 6, showing disaggregated coefficients for Panel B)

	Dependent variable: Indicator for ending					
	UCDP/PRIO Civil War			Other Civil War		
	(1)	(2)	(3)	(4)	(5)	(6)
Covariate	Low	High Cum.	High	FL	S	COW
Annual Crop Price Shock, t	0.0327	0.0462	0.0915	0.0045	0.0131	0.0637
	(0.0363)	(0.0279)	(0.0775)	(0.0350)	(0.0374)	(0.0731)
Annual Crop Price Shock, t-1	0.0568	0.0451	-0.0407	-0.0266	0.0343	0.1496
	(0.0515)	(0.0293)	(0.1088)	(0.0290)	(0.0361)	(0.0612)**
Annual Crop Price Shock, t-2	-0.0271	0.0218	0.1474	0.0158	-0.0170	0.0356
	(0.0317)	(0.0395)	(0.0664)**	(0.0197)	(0.0237)	(0.0802)
Perennial Crop Price Shock, t	0.0318	0.0354	0.0743	0.0060	-0.0003	0.0928
	(0.0291)	(0.0221)	(0.0622)	(0.0232)	(0.0259)	(0.0415)**
Perennial Crop Price Shock, t-1	0.0438	0.0417	-0.0153	0.0089	0.0258	0.0648
	(0.0352)	(0.0269)	(0.0781)	(0.0186)	(0.0185)	(0.0389)
Perennial Crop Price Shock, t-2	-0.0005	0.0230	0.1253	-0.0036	-0.0093	0.0067
	(0.0213)	(0.0249)	(0.0616)**	(0.0154)	(0.0149)	(0.0358)
Mineral, Oil & Gas Price Shock, t	0.0452	0.0459	0.1048	0.0029	0.0194	0.0411
	(0.0410)	(0.0306)	(0.0961)	(0.0387)	(0.0396)	(0.0789)
Mineral, Oil & Gas Price Shock, t-1	0.0614	0.0434	-0.0991	-0.0250	0.0438	0.1634
	(0.0609)	(0.0355)	(0.1338)	(0.0326)	(0.0398)	(0.0606)***
Mineral, Oil & Gas Price Shock, t-2	-0.0104	0.0438	0.1991	0.0220	-0.0121	0.0793
	(0.0343)	(0.0451)	(0.0924)**	(0.0241)	(0.0278)	(0.0907)
Annual crop shock						
Sum of all price shock coefficients	0.039	0.055	0.254	-0.008	0.057	0.241
p-value of sum	[0.367]	[0.341]	[0.042]**	[0.823]	[0.280]	[0.012]**
Impact of shocks on risk (%Δ)	0.244	0.502	0.996	-0.135	0.646	1.264
Perennial crop shock						
Sum of all price shock coefficients	0.071	0.067	0.183	0.003	0.029	0.181
p-value of sum	[0.044]**	[0.171]	[0.035]**	[0.932]	[0.342]	[0.008]***
Impact of shocks on risk (%Δ)	0.442	0.608	0.719	0.051	0.332	0.948
Extractive crop shock						
Sum of all price shock coefficients	0.057	0.065	0.275	-0.007	0.067	0.290
p-value of sum	[0.266]	[0.267]	[0.066]*	[0.862]	[0.279]	[0.008]***
Impact of shocks on risk (%Δ)	0.352	0.590	1.080	-0.123	0.755	1.520
Observations	995	749	353	1,013	907	665
R-squared	0.300	0.325	0.477	0.306	0.321	0.348
Number of Countries	83	52	42	56	61	59
Mean of Dependent Variable	0.161	0.109	0.255	0.087	0.08	0.191

Notes: All regressions use a linear probability model and include year fixed effects, country fixed effects, and country-specific time trends. Robust standard errors in parentheses, clustered by country. Dataset abbreviations are as follows: FL = Fearon and Laitin, S = Sambanis, COW = Correlates of war, and PT = Powell and Thyne.
*** p<0.01, ** p<0.05, * p<0.1

Appendix Table 11: Example of sensitivity to specification - Reconciliation with Bruckner-Ciccone (BC) Results

	Indicator for Civil War Onset (UCDP/PRIO High measure)								Use of alternate dependent variables (using restricted sample and BC estimator)					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Covariate	Base result from Table 2	Use 3% Price-Maker Cutoff and drop X/GDP adj.	Sub-Saharan Africa (SSA) Only	SSA Only and Year > 1983	Restrict years to BC sample	Use more limited index of commod.	Use older coding of dependent variable	Use BC estimator (BC 2010 result)	UCDP/ PRIO High	UCDP/ PRIO High CML	UCDP/ PRIO Any	FL	S	COW
Price Shock, t	0.0006	-0.0018	-0.0044	-0.0133	-0.0050	-0.0085	-0.0108	-0.0108	-0.0085	0.0108	0.0163	-0.0059	-0.0104	0.0185
	(0.0015)	(0.0085)	(0.0034)	(0.0076)*	(0.0054)	(0.0078)	(0.0060)*	(0.0056)*	(0.0074)	(0.0063)*	(0.0093)*	(0.0086)	(0.0085)	(0.0127)
Price Shock, t-1	0.0003	0.0094	0.0002	-0.0032	0.0028	-0.0025	-0.0055	-0.0055	-0.0025	-0.0115	-0.0149	-0.0172	-0.0092	-0.0054
	(0.0012)	(0.0109)	(0.0031)	(0.0062)	(0.0064)	(0.0059)	(0.0073)	(0.0069)	(0.0056)	(0.0067)*	(0.0113)	(0.0084)**	(0.0067)	(0.0065)
Price Shock, t-2	-0.0004	0.0077	-0.0065	-0.0084	-0.0048	-0.0078	-0.0171	-0.0171	-0.0078	0.0039	-0.0094	0.0021	0.0000	0.0026
	(0.0011)	(0.0161)	(0.0044)	(0.0075)	(0.0068)	(0.0098)	(0.0081)**	(0.0077)**	(0.0093)	(0.0069)	(0.0077)	(0.0095)	(0.0064)	(0.0103)
Sum of all shocks	0.001	0.015	-0.011	-0.025	-0.007	-0.019	-0.033	-0.033	-0.019	0.003	-0.008	-0.021	-0.020	0.016
p-value of sum	[0.836]	[0.558]	[0.177]	[0.104]	[0.562]	[0.211]	[0.065]*	[0.052]*	[0.187]	[0.743]	[0.608]	[0.249]	[0.070]*	[0.374]
Impact on risk (%Δ)	0.028	0.801	-0.497	-0.931	-0.348	-0.616	-1.179	-1.179	-0.616	0.094	-0.123	-0.931	-0.640	0.373
Observations	4,748	4,781	1,805	932	704	820	814	814	820	732	686	662	689	731
R-squared	0.086	0.086	0.104	0.090	0.091	0.118	0.098	0.012	0.004	0.009	0.009	0.012	0.005	0.008
Number of Countries	117	118	45	45	38	39	39	39	39	39	38	34	38	39
Dependent variable mean	0.019	0.019	0.022	0.027	0.020	0.031	0.028	0.028	0.031	0.034	0.066	0.023	0.031	0.042

Notes: All regressions use a linear probability model and include year fixed effects, country fixed effects, and country-specific time trends. Robust standard errors in parentheses, clustered by country

*** p<0.01, ** p<0.05, * p<0.1

Appendix Table 12: Robustness analysis on ending using UCDP/PRIO (Cumulative High) dependent variable, LPM estimates

	Dependent variable: Indicator of conflict ending Using UCDP/PRIO (High cumulative)										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Covariate	Baseline	Not Including Consumption Shocks	Not Including Exports/GDP Scale Adjustment	Including All Price-Makers	Using 3% Price-Maker Cutoff	Using 20% Price-Maker Cutoff	With Fixed 1980 Weights	Censoring Price Outliers	Dropping Country-Specific Time Trends Effects	Dropping Time Fixed Effects	Dropping Country Fixed Effects
Annual Crop Price Shock, t	0.0462	0.0426	0.0172	0.0176	0.0376	0.0279	0.0317	0.0462	0.0544	0.0445	0.0462
	(0.0279)	(0.0297)	(0.0223)	(0.0284)	(0.0343)	(0.0294)	(0.0315)	(0.0279)	(0.0332)	(0.0231)*	(0.0351)
Annual Crop Price Shock, t-1	0.0451	0.0351	0.0320	0.0558	0.0061	0.0770	0.0491	0.0451	0.0307	0.0262	0.0369
	(0.0293)	(0.0339)	(0.0222)	(0.0360)	(0.0672)	(0.0285)***	(0.0324)	(0.0293)	(0.0268)	(0.0347)	(0.0284)
Annual Crop Price Shock, t-2	0.0218	-0.0086	0.0206	0.0147	-0.0020	0.0133	-0.0120	0.0218	0.0047	-0.0038	0.0110
	(0.0395)	(0.0371)	(0.0275)	(0.0459)	(0.0437)	(0.0420)	(0.0340)	(0.0395)	(0.0338)	(0.0287)	(0.0323)
Perennial Crop Price Shock, t	0.0354	0.0359	0.0154	0.0466	0.0280	0.0353	0.0108	0.0354	0.0387	0.0269	0.0331
	(0.0221)	(0.0200)*	(0.0125)	(0.0159)***	(0.0240)	(0.0228)	(0.0093)	(0.0221)	(0.0230)*	(0.0206)	(0.0225)
Perennial Crop Price Shock, t-1	0.0417	0.0371	0.0342	0.0287	0.0153	0.0421	0.0153	0.0417	0.0359	0.0293	0.0374
	(0.0269)	(0.0171)**	(0.0160)**	(0.0214)	(0.0458)	(0.0233)*	(0.0160)	(0.0269)	(0.0258)	(0.0244)	(0.0258)
Perennial Crop Price Shock, t-2	0.0230	0.0016	0.0158	0.0330	0.0235	0.0302	0.0132	0.0230	0.0216	0.0067	0.0228
	(0.0249)	(0.0207)	(0.0165)	(0.0230)	(0.0279)	(0.0258)	(0.0232)	(0.0249)	(0.0249)	(0.0197)	(0.0253)
Mineral, Oil & Gas Price Shock, t	0.0459	0.0373	0.0234	0.0332	0.0390	0.0538	-0.0145	0.0459	0.0586	0.0433	0.0516
	(0.0306)	(0.0283)	(0.0238)	(0.0326)	(0.0291)	(0.0328)	(0.0243)	(0.0306)	(0.0326)*	(0.0236)*	(0.0346)
Mineral, Oil & Gas Price Shock, t-1	0.0434	0.0407	0.0286	0.0181	-0.0024	0.0304	-0.0089	0.0434	0.0276	0.0236	0.0327
	(0.0355)	(0.0369)	(0.0295)	(0.0282)	(0.0762)	(0.0268)	(0.0319)	(0.0355)	(0.0318)	(0.0375)	(0.0324)
Mineral, Oil & Gas Price Shock, t-2	0.0438	0.0006	0.0362	0.0638	0.0040	0.0626	-0.0004	0.0438	0.0225	0.0133	0.0298
	(0.0451)	(0.0408)	(0.0289)	(0.0376)*	(0.0456)	(0.0429)	(0.0209)	(0.0451)	(0.0407)	(0.0368)	(0.0413)
Sum of all annual crop shocks	0.113	0.069	0.0698	0.0880	0.0417	0.118	0.0688	0.113	0.0897	0.0669	0.0941
p-value of sum	[0.076]*	[0.300]	[0.158]	[0.145]	[0.713]	[0.079]*	[0.277]	[0.076]*	[0.153]	[0.267]	[0.136]
Sum of all pereannial crop shocks	0.100	0.0746	0.0654	0.108	0.0668	0.108	0.0393	0.100	0.0961	0.0629	0.0932
p-value of sum	[0.027]**	[0.029]**	[0.012]**	[0.001]***	[0.357]	[0.039]**	[0.087]*	[0.027]**	[0.034]**	[0.143]	[0.029]**
Sum of all oil and gas shocks	0.133	0.0786	0.0882	0.115	0.0406	0.147	-0.0239	0.133	0.109	0.0803	0.114
p-value of sum	[0.045]**	[0.252]	[0.065]*	[0.074]*	[0.727]	[0.035]**	[0.666]	[0.045]**	[0.074]*	[0.198]	[0.066]*
Observations	749	749	749	749	749	749	749	749	749	749	749

Notes: All regressions use a linear probability model and include year fixed effects, country fixed effects, and country-specific time trends. Robust standard errors in parentheses, clustered by country.

*** p<0.01, ** p<0.05, * p<0.1

Appendix Table 13: The impact of disaggregated commodity price shocks on battle deaths, without import shock

	Dependent variable					
	Linear Battle Deaths			Natural Log of Battle Deaths		
	(1)	(2)	(3)	(4)	(5)	(6)
Covariate	Static	Dynamic	Omitting non-Annual Deaths	Static	Dynamic	Omitting non-Annual Deaths
Annual Crop Price Shock, t	-661.1	-1,071.9	-814.4	-0.179	-0.229	-0.123
	(828.8)	(478.8)**	(569.6)	(0.195)	(0.151)	(0.173)
Annual Crop Price Shock, t-1	-133.9	385.5	106.4	-0.116	-0.052	-0.147
	(549.7)	(518.6)	(417.0)	(0.158)	(0.153)	(0.129)
Annual Crop Price Shock, t-2	-602.4	-248.6	-244.0	-0.260	-0.211	-0.176
	(781.9)	(487.7)	(689.5)	(0.205)	(0.164)	(0.198)
Perennial Crop Price Shock, t	-173.3	-455.0	-117.7	-0.140	-0.174	-0.127
	(487.7)	(285.6)	(281.2)	(0.108)	(0.087)**	(0.090)
Perennial Crop Price Shock, t-1	148.7	483.6	360.7	-0.063	-0.022	-0.071
	(435.2)	(359.1)	(262.7)	(0.116)	(0.111)	(0.094)
Perennial Crop Price Shock, t-2	611.0	435.9	554.1	-0.018	-0.030	-0.009
	(580.3)	(434.1)	(521.9)	(0.133)	(0.116)	(0.121)
Mineral, Oil & Gas Price Shock, t	-548.6	-1,118.8	-756.5	-0.208	-0.277	-0.205
	(794.6)	(440.1)**	(535.3)	(0.164)	(0.109)**	(0.158)
Mineral, Oil & Gas Price Shock, t-1	-101.5	625.2	129.8	-0.112	-0.026	-0.136
	(738.2)	(693.9)	(474.1)	(0.196)	(0.196)	(0.151)
Mineral, Oil & Gas Price Shock, t-2	-196.2	-254.2	-103.9	-0.270	-0.272	-0.198
	(1,036.6)	(592.1)	(835.0)	(0.248)	(0.195)	(0.233)
Duration	-63.6	-41.7	-13.4	0.007	0.009	0.011
	(50.9)	(27.1)	(19.8)	(0.015)	(0.013)	(0.015)
Indicator for first year of conflict	-2,594.8	339.4	453.1	-1.298	-0.943	-0.932
	(771.3)***	(651.9)	(512.1)	(0.206)***	(0.209)***	(0.250)***
Lagged Battle Deaths		0.732	0.904		0.0001	0.0001
		(0.136)***	(0.025)***		(0.0000)***	(0.0000)***
Annual crop shock						
Sum of all price shock coefficients	-1397	-935.0	-952.0	-0.554	-0.492	-0.446
p-value of sum	[0.497]	[0.438]	[0.483]	[0.280]	[0.232]	[0.274]
Impact of shocks on risk (%Δ)	-0.271	-0.181	-0.237	-0.079	-0.070	-0.067
Perennial crop shock						
Sum of all price shock coefficients	586.4	464.5	797.1	-0.220	-0.226	-0.206
p-value of sum	[0.661]	[0.581]	[0.359]	[0.502]	[0.417]	[0.429]
Impact of shocks on risk (%Δ)	0.114	0.090	0.198	-0.031	-0.032	-0.031
Extractive crop shock						
Sum of all price shock coefficients	-846.3	-747.8	-730.5	-0.590	-0.574	-0.539
p-value of sum	[0.733]	[0.607]	[0.651]	[0.294]	[0.190]	[0.225]
Impact of shocks on risk (%Δ)	-0.164	-0.145	-0.182	-0.084	-0.081	-0.080
Observations	1,009	1,009	690	1,009	1,009	690
Mean of Dependent Variable	5159	5159	4016	7.065	7.065	6.706

Notes: All regressions use a maximum likelihood interval regression model and include year and region fixed effects. Robust standard errors in parentheses, clustered by country.

*** $p<0.01$, ** $p<0.05$, * $p<0.1$