# Tables and Figures

## Table 1. Overall mean by year for time-varying variables

| | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|---|---|---|---|---|
| Proportion of coca fields per 1000 hectares | 0.937 | 0.640 | 0.312 | 0.302 | 0.314 | 0.310 | 0.318 | 0.421 | 0.324 | 0.388 |
| | [9.205] | [5.782] | [1.739] | [1.357] | [1.423] | [1.438] | [1.615] | [2.044] | [1.466] | [1.721] |
| Land tenure formality index | 0.794 | 0.795 | 0.800 | 0.804 | 0.812 | 0.812 | 0.818 | 0.822 | 0.827 | 0.833 |
| | [0.221] | [0.220] | [0.214] | [0.211] | [0.206] | [0.206] | [0.202] | [0.196] | [0.192] | [0.184] |
| Homicide rate per 100000 inhabitants | 56.994 | 61.544 | 65.687 | 59.940 | 51.315 | 40.653 | 40.991 | 40.785 | 34.545 | 29.423 |
| | [78.166] | [75.834] | [77.857] | [83.567] | [67.680] | [52.456] | [50.540] | [47.243] | [41.698] | [33.766] |
| Public expenditures per capita in education | 51.404 | 51.574 | 58.746 | 45.978 | 39.059 | 44.723 | 39.371 | 57.229 | 63.765 | 222.992 |
| | [39.980] | [43.362] | [52.011] | [43.492] | [72.963] | [60.066] | [59.429] | [82.744] | [79.362] | [3012.677] |
| Public expenditures per capita in justice | 0.238 | 0.285 | 1.275 | 16.829 | 13.291 | 3.952 | 4.135 | 6.732 | 8.011 | 32.650 |
| | [1.250] | [0.861] | [3.100] | [48.347] | [20.848] | [11.012] | [9.504] | [17.332] | [14.679] | [537.091] |
| Number of agricultural loans per 1000 inhabitants | 2.367 | 2.038 | 3.282 | 5.059 | 8.383 | 11.725 | 13.525 | 13.167 | 12.042 | 13.564 |
| | [3.847] | [3.449] | [4.506] | [6.344] | [10.366] | [13.983] | [16.127] | [15.802] | [14.367] | [15.419] |
| Land quality gini index | 0.687 | 0.687 | 0.688 | 0.687 | 0.689 | 0.689 | 0.690 | 0.692 | 0.692 | 0.692 |
| | [0.116] | [0.113] | [0.112] | [0.112] | [0.110] | [0.110] | [0.110] | [0.107] | [0.106] | [0.103] |
| Number of hectares per landowner | 4.679 | 4.789 | 4.712 | 4.676 | 4.620 | 4.577 | 4.545 | 4.516 | 4.552 | 4.496 |
| | [13.597] | [13.843] | [13.601] | [13.409] | [13.226] | [13.067] | [13.011] | [12.808] | [12.870] | [12.562] |
| Health coverage (SISBEN) | 89.102 | 89.102 | 89.102 | 89.102 | 89.102 | 89.102 | 88.781 | 89.102 | 89.423 | 89.102 |
| | [92.068] | [92.068] | [92.068] | [92.068] | [92.068] | [92.068] | [182.821] | [92.068] | [11.460] | [92.068] |
| Avearge over years of schooling | 4.258 | 4.258 | 4.258 | 4.258 | 4.258 | 4.258 | 4.258 | 4.258 | 4.258 | 4.258 |
| | [0.900] | [0.900] | [0.900] | [0.900] | [0.900] | [0.900] | [0.900] | [0.900] | [0.900] | [0.900] |
| Observations | 877 | 877 | 877 | 877 | 877 | 877 | 877 | 877 | 877 | 877 |

*Notes* - Standard errors in brackets. We present the mean over all municipalities each year. Data source: CEDE, 2012.

TABLE 2. Mean test for the time-variant variable by presence of coca

| | Municipalities that ever had coca crops | Municipalities that never had coca crops | Difference |
|---|---|---|---|
| Land tenure formality index | 0.667 | 0.855 | -0.187*** |
| | [-38.824] | [0.000] | [0.00483] |
| | 2010 | 6760 | |
| Homicide rate per 100000 inhabitants | 65.043 | 43.176 | 21.867*** |
| | [13.536] | [0.000] | [1.615] |
| | 2010 | 6760 | |
| Public expenditures per capita in education | 51.382 | 72.272 | -20.889 |
| | [-0.861] | [0.389] | [24.27] |
| | 2010 | 6760 | |
| Public expenditures per capita in justice | 5.338 | 9.751 | -4.414 |
| | [-1.016] | [0.310] | [4.346] |
| | 2010 | 6760 | |
| Number of agricultural loans per 1000 inhabitants | 5.807 | 9.320 | -3.513*** |
| | [-11.160] | [0.000] | [0.315] |
| | 2010 | 6760 | |
| Land quality gini index | 0.646 | 0.702 | -0.057*** |
| | [-20.728] | [0.000] | [0.00273] |
| | 2010 | 6760 | |
| Number of hectares per landowner | 8.693 | 3.404 | 5.289*** |
| | [15.999] | [0.000] | [0.331] |
| | 2010 | 6760 | |
| Health coverage (SISBEN) | 88.893 | 89.164 | -0.271 |
| | [-0.106] | [0.916] | [2.557] |
| | 2010 | 6760 | |
| Avearge over years of schooling | 3.753 | 4.408 | -0.655*** |
| | [0.852] | [0.859] | [0.0218] |
| | 2010 | 6760 | |

*Notes* - Standard errors in brackets. Number of observation in the third row. * Significant at 10%, ** significant at 5%, and *** significant at 1%. Two-side mean test significance reported. We define presence of coca if a given municipality had at least one year coca. Data source: CEDE, 2012.

TABLE 3. Summary statistics for time-variant variables

| | | Mean | St. Deviation | Min | Max | Observation |
|---|---|---|---|---|---|---|
| Proportion of coca fields per 1000 hectares | overall | 0.427 | 3.732 | 0 | 196.4 | 8770 |
| | between | . | 2.424 | 0 | 44.90 | 877 |
| | within | . | 2.839 | -39.10 | 151.9 | 10 |
| Land tenure formality index | overall | 0.812 | 0.206 | 0 | 1 | 8770 |
| | between | . | 0.201 | 0.0816 | 1 | 877 |
| | within | . | 0.0446 | 0.0759 | 1.637 | 10 |
| Municipal development index | overall | 43.98 | 15.34 | 4.188 | 92.29 | 8770 |
| | between | . | 9.266 | 13.18 | 76.31 | 877 |
| | within | . | 12.22 | 16.38 | 79.45 | 10 |
| Homicide rate per 100000 inhabitants | overall | 48.19 | 64.24 | 0 | 1232.2 | 8770 |
| | between | . | 42.08 | 0 | 352.2 | 877 |
| | within | . | 48.56 | -258.8 | 1070.4 | 10 |
| Public expenditures per capita in education | overall | 67.48 | 955.4 | 0 | 78221.0 | 8770 |
| | between | . | 304.2 | 10.82 | 7859.4 | 877 |
| | within | . | 905.7 | -7775.3 | 70429.1 | 10 |
| Public expenditures per capita in justice | overall | 8.740 | 171.1 | 0 | 15572.8 | 8770 |
| | between | . | 54.14 | 0.244 | 1560.4 | 877 |
| | within | . | 162.3 | -1551.6 | 14021.2 | 10 |
| Number of agricultural loans per 1000 inhabitants | overall | 8.515 | 12.48 | 0 | 91.35 | 8770 |
| | between | . | 9.478 | 0 | 53.45 | 877 |
| | within | . | 8.121 | -41.43 | 65.81 | 10 |
| Land quality gini index | overall | 0.689 | 0.110 | 0 | 0.981 | 8770 |
| | between | . | 0.107 | 0.0493 | 0.977 | 877 |
| | within | . | 0.0241 | 0.0947 | 1.181 | 10 |
| Number of hectares per landowner | overall | 4.616 | 13.20 | 0.0500 | 178.9 | 8770 |
| | between | . | 13.10 | 0.107 | 162.3 | 877 |
| | within | . | 1.653 | -40.08 | 40.84 | 10 |
| Health coverage (SISBEN) | overall | 89.10 | 100.6 | 33.66 | 5261.0 | 8770 |
| | between | . | 92.07 | 48.60 | 2679.1 | 877 |
| | within | . | 40.73 | -2492.8 | 2671.0 | 10 |
| Avearge over years of schooling | overall | 4.258 | 0.900 | 0.750 | 7.720 | 8770 |
| | between | . | 0.900 | 0.750 | 7.720 | 877 |
| | within | . | 0 | 4.258 | 4.258 | 10 |

*Notes* - The table reports between and within variations for all time-varying variables. The within transformation demeans the data by subtracting the mean for each municipality and then adding up the overall mean. This explains the negative minimums for positive variables. The *overall observations* are the total number of observations, *between observations* is the number of observations per time period and *within observations* is the number of time periods in which there is data available for each variable.. Data source: CEDE, 2012.

TABLE 4. Transition probability and descriptive statistics for the presence of coca

| | Transition Probability (%) | | Panel Data Tabulation (%) | | |
|---|---|---|---|---|---|
| | Non-coca | Coca | Overall | Between | Within |
| Non-coca | 97.73 | 2.272 | 85.7 | 91.0 | 94.2 |
| | | | [7515] | [798] | |
| Coca | 13.18 | 86.82 | 14.3 | 22.9 | 62.4 |
| | | | [1255] | [201] | |

*Notes* - Number of observation in brackets. The transition probability describes changes in categorical variable over time. Panel Data Tabulation is constructed by performing one-way tabulations and decomposing counts into within and between components. .Data source: CEDE, 2012.

TABLE 5. Summary statistics for time-invariant variables

| | Mean | Std. Deviation | Min | Max |
|---|---|---|---|---|
| Meters above sea level | 1223.371 | 1215.980 | 2 | 25221.000 |
| Distance to the nearest market (km) | 77.510 | 53.557 | 0 | 360.770 |
| Distance to the nearest market (km) | 119.800 | 79.390 | 0 | 561.533 |
| Suitability of land for farming | 2.745 | 1.210 | 0 | 8.000 |
| Soil erosion | 1.948 | 1.021 | 0 | 5.000 |
| Observations | 877 | | | |

*Notes* - We consider all the municipalities used in the baseline results. Antioquia is excluded. In the panel context, the values are assumed constant across years. Data source: CEDE, 2012.

# Table 6. Baseline results

*Dependent variable: Proportion of coca fields per 1000 hectares*

| | Pooled OLS | OLS FE | System GMM | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Violence as exogenous | | | Violence as endogenous | | | |
| | (I) | (II) | (III) | (IV) | (V) | (VI) | (VII) | (VIII) | (IX) |
| L.Proportion of coca fields per 1000 hectares | 0.538*** | 0.453*** | 0.288*** | 0.285*** | 0.281*** | 0.287*** | 0.292*** | 0.291*** | 0.285*** |
| | [0.056] | [0.006] | [0.031] | [0.031] | [0.031] | [0.030] | [0.026] | [0.025] | [0.026] |
| Land tenure formality index | -1.055*** | 0.441 | -1.484*** | -1.440*** | -1.120*** | -1.481*** | -1.320*** | -1.280*** | -1.017*** |
| | [0.149] | [0.269] | [0.283] | [0.285] | [0.239] | [0.279] | [0.268] | [0.271] | [0.221] |
| Homicide rate per 100000 inhabitants | | | | | | 0.001*** | 0.003 | 0.003 | 0.003 |
| | | | | | | [0.000] | [0.003] | [0.004] | [0.003] |
| Year Fixed Effect | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Time-Variant Controls | No | No | No | Yes | Yes | No | No | Yes | Yes |
| Time-Invariant Controls | No | No | No | No | Yes | No | No | No | Yes |
| No. of observations | 7893 | 7893 | 7893 | 7893 | 7893 | 7893 | 7893 | 7893 | 7893 |
| No. of groups | | 877 | 877 | 877 | 877 | 877 | 877 | 877 | 877 |
| No. of instruments | | | 17 | 23 | 28 | 18 | 24 | 30 | 35 |
| p-value F test of joint significance | | | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| p-value Arellano-Bond test for AR(1) in first differences | | | 0.015 | 0.016 | 0.016 | 0.015 | 0.016 | 0.016 | 0.016 |
| p-value Arellano-Bond test for AR(2) in first differences | | | 0.249 | 0.249 | 0.250 | 0.254 | 0.266 | 0.264 | 0.264 |
| p-value Hansen J test of overidentifying restrictions | | | 0.398 | 0.400 | 0.408 | 0.426 | 0.631 | 0.630 | 0.606 |
| p-value Difference-in-Hansen test of exogeneity for instrument subsets (unrestricted) | | | 0.285 | 0.287 | 0.293 | 0.310 | 0.549 | 0.534 | 0.498 |
| p-value Difference-in-Hansen test of exogeneity for instrument subsets (difference) | | | 0.930 | 0.921 | 0.991 | 0.926 | 0.603 | 0.649 | 0.686 |

*Notes* - * Significant at 10%, ** significant at 5%, and *** significant at 1%. * Significant at 10%, ** significant at 5%, and *** significant at 1%. Base sample is a balanced panel from 2000 to 2009. The dependent variable is the Proportion of Coca Field per 1000 hectares per municipality. Two step System GMM is implemented. We use the forward orthogonal deviations proposed by ? (?). The ? (?) finite sample correction for standard errors is employed. We use two lags instruments in the collapsed instrument matrix. The time-variant controls include: Land quality gini index, Number of hectares per landowner, health coverage (SISBEN), Public expenditure per capita in education, Public expenditure per capita in justice per capita and Agrarian loan. The time-invariant controls include: Altitude, Distance to the National Capital (Bogota), Distance to the main regional market, Land aptitude index and Land Erosion index. The Hansen J-test reports the p-values for the null hypothesis of instrument validity. The values reported for the Diff-in-Hansen test are the p-values for the validity of the additional moment restriction necessary for system GMM. The values reported for AR(1) and AR(2) are the p-values for first and second order autocorrelated disturbances in the first differences equations.

## TABLE 7. Unbalanced panel using only updated cadastral information

*Dependent variable: Proportion of coca fields per 1000 hectares*

| | Pooled OLS | OLS FE | System GMM | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Violence as exogenous | | | Violence as endogenous | | | |
| | (I) | (II) | (III) | (IV) | (V) | (VI) | (VII) | (VIII) | (IX) |
| L.Proportion of coca fields per 1000 hectares | 0.738*** | 0.181*** | 0.244* | 0.248* | 0.279** | 0.223* | 0.150 | 0.151 | 0.190 |
| | [0.074] | [0.068] | [0.138] | [0.136] | [0.131] | [0.131] | [0.136] | [0.139] | [0.128] |
| Land tenure formality index | -1.222*** | 1.313 | -1.946*** | -2.125*** | -1.745*** | -1.942*** | -2.140*** | -2.361*** | -1.825*** |
| | [0.295] | [1.532] | [0.495] | [0.523] | [0.463] | [0.505] | [0.579] | [0.693] | [0.607] |
| Homicide rate per 100000 inhabitants | | | | | | 0.003* | 0.010** | 0.011** | 0.010** |
| | | | | | | [0.001] | [0.005] | [0.005] | [0.005] |
| Year Fixed Effect | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Time-Variant Controls | No | No | No | Yes | Yes | No | No | Yes | Yes |
| Time-Invariant Controls | No | No | No | No | Yes | No | No | No | Yes |
| No. of observations | 1991 | 1991 | 1991 | 1991 | 1991 | 1991 | 1991 | 1991 | 1991 |
| No. of groups | | 479 | 479 | 479 | 479 | 479 | 479 | 479 | 479 |
| No. of instruments | | | 17 | 23 | 28 | 18 | 24 | 30 | 35 |
| p-value F test of joint significance | | | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| p-value Arellano-Bond test for AR(1) in first differences | | | 0.066 | 0.063 | 0.055 | 0.062 | 0.050 | 0.043 | 0.039 |
| p-value Arellano-Bond test for AR(2) in first differences | | | 0.428 | 0.426 | 0.373 | 0.509 | 0.986 | 0.983 | 0.806 |
| p-value Hansen J test of overidentifying restrictions | | | 0.234 | 0.243 | 0.241 | 0.234 | 0.720 | 0.686 | 0.696 |
| p-value Difference-in-Hansen test of exogeneity for instrument subsets (unrestricted) | | | 0.159 | 0.164 | 0.160 | 0.178 | 0.621 | 0.620 | 0.613 |
| p-value Difference-in-Hansen test of exogeneity for instrument subsets (difference) | | | 0.737 | 0.771 | 0.847 | 0.509 | 0.699 | 0.575 | 0.634 |

*Notes* - * Significant at 10%, ** significant at 5%, and *** significant at 1%. * Significant at 10%, ** significant at 5%, and *** significant at 1%. Base sample is an unbalanced panel from 2000 to 2009. We only use those municipalities that had cadastral updating. The dependent variable is the Proportion of Coca Field per 1000 hectares per municipality. Two step System GMM is implemented. We use the forward orthogonal deviations proposed by ? (?). The ? (?) finite sample correction for standard errors is employed. We use two lags instruments in the collapsed instrument matrix. The time-variant controls include: Land quality gini index, Number of hectares per landowner, health coverage (SISBEN), Public expenditure per capita in education, Public expenditure per capita in justice per capita and Agrarian loan. The time-invariant controls include: Altitude, Distance to the National Capital (Bogota), Distance to the main regional market, Land aptitude index and Land Erosion index. The Hansen J-test reports the p-values for the null hypothesis of instrument validity. The values reported for the Diff-in-Hansen test are the p-values for the validity of the additional moment restriction necessary for system GMM. The values reported for AR(1) and AR(2) are the p-values for first and second order autocorrelated disturbances in the first differences equations.

## Table 8. Results including Antioquia (2006-2009)

*Dependent variable: Proportion of coca fields per 1000 hectares*

| | Pooled OLS | OLS FE | System GMM | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Violence as exogenous | | | | Violence as endogenous | | |
| | (I) | (II) | (III) | (IV) | (V) | (VI) | (VII) | (VIII) | (IX) |
| L.Proportion of coca fields per 1000 hectares | 0.820*** | -0.228*** | -0.089 | -0.089 | -0.074 | -0.099 | 0.016 | 0.032 | 0.030 |
| | [0.060] | [0.062] | [0.276] | [0.276] | [0.256] | [0.275] | [0.336] | [0.346] | [0.354] |
| Land tenure formality index | -0.894*** | 0.037 | -3.943*** | -3.845*** | -3.225*** | -3.791*** | -5.573 | -5.301 | -5.267 |
| | [0.186] | [0.879] | [1.320] | [1.303] | [1.051] | [1.257] | [4.234] | [3.931] | [5.240] |
| Homicide rate per 100000 inhabitants | | | | | | 0.007** | -0.080 | -0.085 | -0.098 |
| | | | | | | [0.003] | [0.164] | [0.175] | [0.219] |
| Year Fixed Effect | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Time-Variant Controls | No | No | No | Yes | Yes | No | No | Yes | Yes |
| Time-Invariant Controls | No | No | No | No | Yes | No | No | No | Yes |
| No. of observations | 2997 | 2997 | 2997 | 2997 | 2997 | 2997 | 2997 | 2997 | 2997 |
| No. of groups | | 999 | 999 | 999 | 999 | 999 | 999 | 999 | 999 |
| No. of instruments | | | 5 | 11 | 16 | 6 | 6 | 12 | 17 |
| p-value F test of joint significance | | | 0.000 | 0.000 | 0.000 | 0.000 | 0.009 | 0.110 | 0.489 |
| p-value Arellano-Bond test for AR(1) in first differences | | | 0.778 | 0.774 | 0.718 | 0.672 | 0.596 | 0.599 | 0.631 |
| p-value Arellano-Bond test for AR(2) in first differences | | | . | . | . | . | . | . | . |
| p-value Hansen J test of overidentifying restrictions | | | . | . | . | . | . | . | . |
| p-value Difference-in-Hansen test of exogeneity for instrument subsets (unrestricted) | | | . | . | . | . | . | . | . |
| p-value Difference-in-Hansen test of exogeneity for instrument subsets (difference) | | | . | . | . | . | . | . | . |

*Notes* - * Significant at 10%, ** significant at 5%, and *** significant at 1%. * Significant at 10%, ** significant at 5%, and *** significant at 1%. Base sample is an unbalanced panel from 2006 to 2009. The dependent variable is the Proportion of Coca Field per 1000 hectares per municipality. Two step System GMM is implemented. We use the forward orthogonal deviations proposed by ? (?). The ? (?) finite sample correction for standard errors is employed. We use two lags instruments in the collapsed instrument matrix. The time-variant controls include: Land quality gini index, Number of hectares per landowner, health coverage (SISBEN), Public expenditure per capita in education, Public expenditure per capita in justice per capita and Agrarian loan. The time-invariant controls include: Altitude, Distance to the National Capital (Bogota), Distance to the main regional market, Land aptitude index and Land Erosion index. The Hansen J-test reports the p-values for the null hypothesis of instrument validity. The values reported for the Diff-in-Hansen test are the p-values for the validity of the additional moment restriction necessary for system GMM. The values reported for AR(1) and AR(2) are the p-values for first and second order autocorrelated disturbances in the first differences equations.

## TABLE 9. Robustness check for different samples

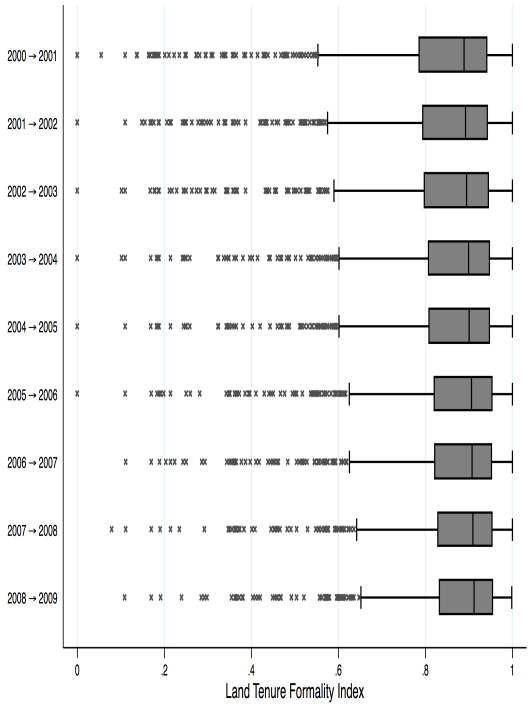
*Dependent variable: Proportion of coca fields per 1000 hectares*

| | Municipalities with rainforest | | | Municipalities with presence of illegal groups | | | Municipalities with more than 20% on public land | | |
|---|---|---|---|---|---|---|---|---|---|
| | (I) | (II) | (III) | (IV) | (V) | (VI) | (VII) | (VIII) | (IX) |
| L.Proportion of coca fields per 1000 hectares | 0.248*** | 0.243*** | 0.246*** | 0.286*** | 0.283*** | 0.283*** | 0.258*** | 0.251*** | 0.253*** |
| | [0.036] | [0.036] | [0.031] | [0.031] | [0.031] | [0.030] | [0.046] | [0.047] | [0.043] |
| Land tenure formality index | -2.546*** | -2.492*** | -2.653*** | -1.549*** | -1.500*** | -1.505*** | -1.724*** | -1.740*** | -1.837*** |
| | [0.780] | [0.787] | [0.830] | [0.299] | [0.302] | [0.299] | [0.578] | [0.577] | [0.587] |
| Homicide rate per 100000 inhabitants | | | 0.003** | | | 0.001** | | | 0.002* |
| | | | [0.001] | | | [0.001] | | | [0.001] |
| Year Fixed Effect | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Time-Variant Controls | No | Yes | Yes | No | Yes | Yes | No | Yes | Yes |
| No. of observations | 963 | 963 | 963 | 6723 | 6723 | 6723 | 1620 | 1620 | 1620 |
| No. of groups | 107 | 107 | 107 | 747 | 747 | 747 | 180 | 180 | 180 |
| No. of instruments | 17 | 23 | 24 | 17 | 23 | 24 | 17 | 23 | 24 |
| p-value F test of joint significance | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| p-value Arellano-Bond test for AR(1) in first differences | 0.107 | 0.108 | 0.104 | 0.016 | 0.016 | 0.016 | 0.194 | 0.200 | 0.188 |
| p-value Arellano-Bond test for AR(2) in first differences | 0.231 | 0.233 | 0.252 | 0.247 | 0.247 | 0.251 | 0.408 | 0.406 | 0.434 |
| p-value Hansen J test of overidentifying restrictions | 0.579 | 0.562 | 0.473 | 0.402 | 0.405 | 0.432 | 0.461 | 0.458 | 0.422 |
| p-value Difference-in-Hansen test of exogeneity for instrument subsets (unrestricted) | 0.513 | 0.524 | 0.498 | 0.289 | 0.291 | 0.315 | 0.378 | 0.370 | 0.369 |
| p-value Difference-in-Hansen test of exogeneity for instrument subsets (difference) | 0.494 | 0.409 | 0.272 | 0.934 | 0.925 | 0.919 | 0.553 | 0.579 | 0.436 |

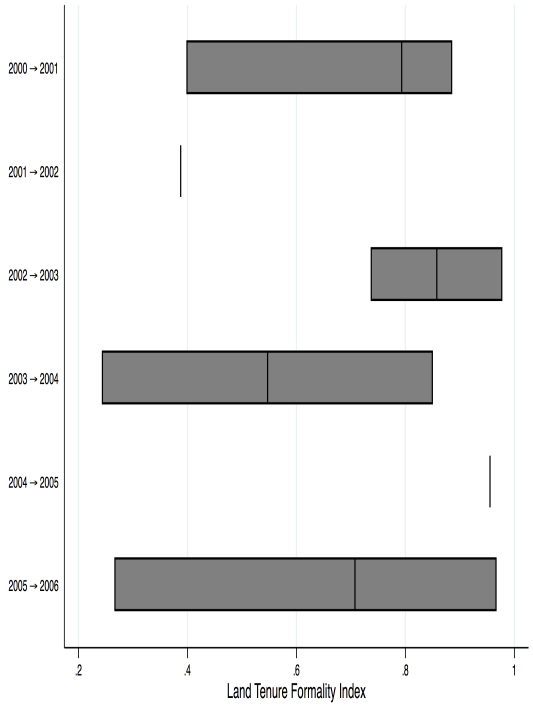
*Notes* - * Significant at 10%, ** significant at 5%, and *** significant at 1%. The sample of municipalities with rainforest are those municipalities that have some soil covered by rainforest. Municipalities with presence of illegal groups are those who have ever had presences of either FARC, ELN or AUC between 2000 and 2009. Municipalities with more than 20% on public land are those municipalities whom cadastral area has, at least, 20% in non-private tenure (i.e. state properties, forest, among others). Two step System GMM is implemented. We use the forward orthogonal deviations proposed by ? (?). The ? (?) finite sample correction for standard errors is employed. We use two lags instruments for the collapsed matrix. The time-variant controls include: Land quality gini index, Number of hectares per landowner, health coverage (SISBEN), Public expenditure per capita in education, Public expenditure per capita in justice per capita and Agrarian loan. The time-invariant controls were omitted due to redundancy with the split criteria. The Hansen J-test reports the p-values for the null hypothesis of instrument validity. The values reported for the Diff-in-Hansen test are the p-values for the validity of the additional moment restriction necessary for system GMM. The values reported for AR(1) and AR(2) are the p-values for first and second order autocorrelated disturbances in the first differences equations.

GRAPH 1. Land Tenure Formality Index by Change of Presence of coca over years

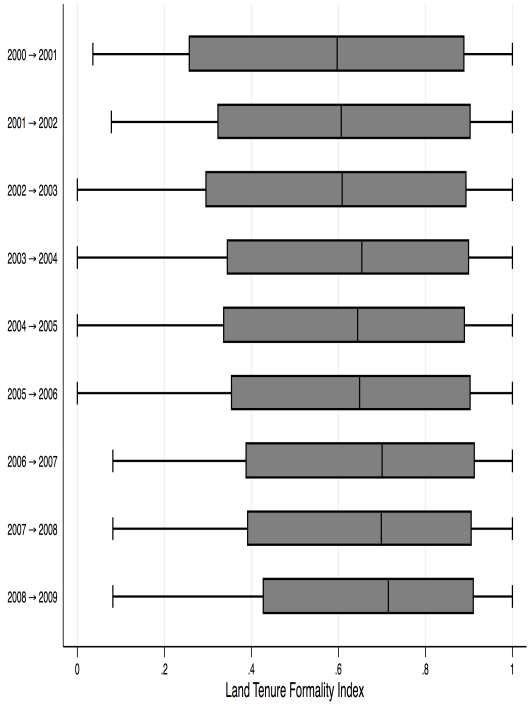
(a) Non-coca → Non-coca



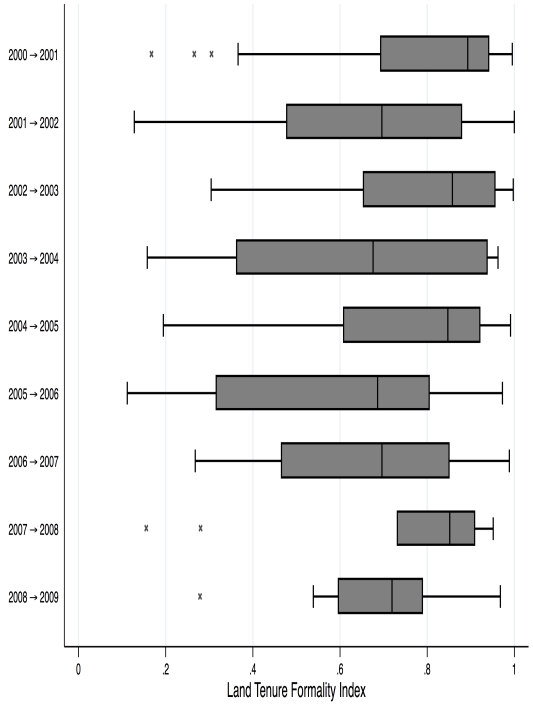

(b) Coca → Coca




(c) Non-coca → Coca

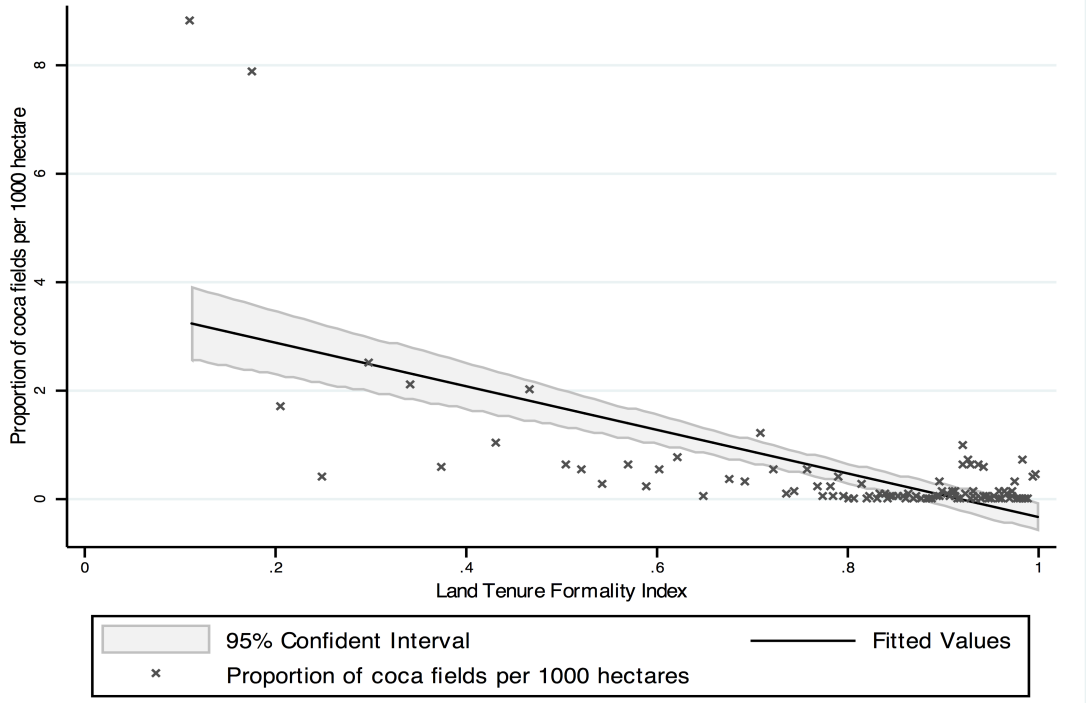



(d) Coca → No-Coca



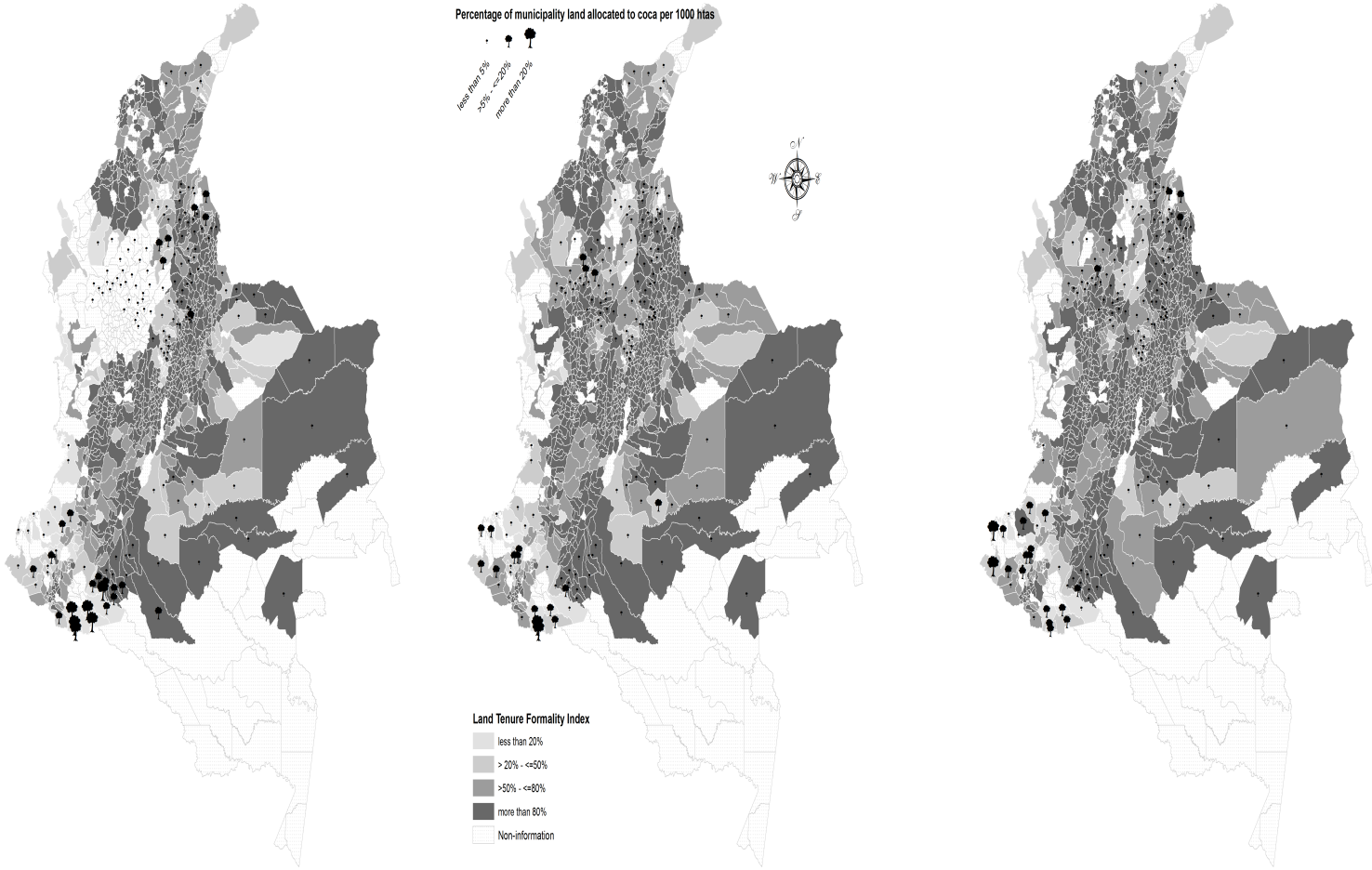

*Notes* - The graph describes the box plot for the Formality index for the four different variation of coca presences between two years. For instance, if we found that a given municipality had coca the year before and the current year we categorize under "*Coca → Coca*"; or, if it had coca the year before but not the current year we categorize under "*Coca → Non-coca*", and so on. Data source: CEDE, 2012.

GRAPH 2. Scatter plot by Land Tenure Formality Index quantiles.




*Notes* - The graphs shows the mean of the scatter plot graph for the mean of the Proportion of Municipality Coca fields per 1000 hectares by the 100 quantiles of the Land Tenure Formality Index. All the years were considered. Data source: CEDE, 2013.

GRAPH 3. Spatial distribution for Land Tenure Formality Index and percentage of municipality land allocated to coca




2000 2006 2009

*Notes* - All maps have the same scale in both variables. In 2000, the department of Antioquia is missing due to information availability. Data source: CEDE, 2013.