

Table S1. Data Source: Panel Data on Agricultural Economy across 31 Provinces in China, 2015-2021.

	DMU	Consumption of Pesticides (ton)	Rural Population (10,000P)	Consumption of Chemical Fertilizers (10,000tons)	Consumption of Diesels (10,000tons)	Gross Output Value of Agriculture, Forestry, Animal Husbandry and Fishery (100millions CNY)
2015	Beijing	3174	292.50	10.5	2.8	368.24
2015	Tianjin	3528	268.55	21.8	15.5	467.44
2015	Hebei	83328	3613.71	335.5	293.2	5978.88
2015	Shanxi	31035	1647.75	118.5	29.8	1522.64
2015	Inner Mongolia	32961	996.88	229.4	80.4	2751.55
2015	Liaoning	59875	1430.85	152.1	72.5	4686.71
2015	Jilin	62285	1230.46	231.2	66.7	2880.62
2015	Heilongjiang	82949	1571.00	255.3	145	5044.93
2015	Shanghai	4415	299.49	9.9	13.4	302.62
2015	Jiangsu	78100	2670.47	320	108.6	7030.76
2015	Zhejiang	56458	1894.34	87.5	203.2	2933.44
2015	Anhui	111048	3041.08	338.7	75.7	4390.80
2015	Fujian	55770	1435.79	123.8	86.2	3717.87
2015	Jiangxi	93873	2208.85	143.6	28.8	2859.10
2015	Shandong	151004	4233.29	463.5	165.8	9549.63
2015	Henan	128748	5038.62	716.1	114.7	7641.27
2015	Hubei	120685	2524.92	333.9	65.6	5728.56
2015	Hunan	122353	3331.15	246.5	43.6	5630.75
2015	Guangdong	113782	3394.65	256.5	78.7	5520.03
2015	Guangxi	74916	2539.00	259.9	64.8	4197.12
2015	Hainan	39800	408.78	51.1	21.7	1323.91
2015	Chongqing	18199	1178.26	97.7	21.4	1738.15
2015	Sichuan	58912	4291.00	249.8	46.9	6377.84
2015	Guizhou	13722	2046.76	103.7	11	2738.67
2015	Yunnan	58648	2687.18	231.9	86.3	3383.09
2015	Tibet	1074	234.10	6	5.4	149.46
2015	Shaanxi	13092	1747.81	231.9	92.3	2813.50
2015	Gansu	78848	1476.80	97.9	42.7	1722.09
2015	Qinghai	1956	292.45	10.1	6.5	319.27
2015	Ningxia	2593	299.01	40.1	22.2	483.02
2015	Xinjiang	25838	1245.23	248.1	86.3	2804.42
2016	Beijing	3031.00	293.355	9.7	2.50	338.06351

2016	Tianjin	3307.00	266.633	21.4	14.90	494.4426492
2016	Hebei	81691.00	3487	331.8	218.70	6083.856809
2016	Shanxi	30550.00	1612.35	117.1	29.20	1534.02503
2016	Inner Mongolia	32339.00	978.012	234.6	81.00	2794.217417
2016	Liaoning	56264.00	1428.54	148.1	70.70	4421.777139
2016	Jilin	58523.00	1203.34	233.6	67.00	2724.875662
2016	Heilongjiang	82474.00	1549.99	252.8	145.50	5197.753455
2016	Shanghai	3913.00	292.82	9.2	13.70	285.0856727
2016	Jiangsu	76184.00	2582.08	312.5	108.70	7235.0635
2016	Zhejiang	49482.00	1844.7	84.5	203.20	3146.0617
2016	Anhui	105704.00	2974.7	327	75.70	4655.5279
2016	Fujian	55387.00	1410.14	123.8	86.30	4155.680836
2016	Jiangxi	92188.00	2153.65	142	27.80	3130.29252
2016	Shandong	148640.00	4076.28	456.5	162.50	9325.8896
2016	Henan	127107.00	4908.98	715	112.40	7799.674218
2016	Hubei	117401.00	2465.82	328	65.90	6278.3519
2016	Hunan	118661.00	3223.4	246.4	43.70	6081.918079
2016	Guangdong	113652.00	3387.69	261	79.90	6078.428728
2016	Guangxi	85694.00	2511.89	262.1	63.60	4591.36902
2016	Hainan	34028.00	396.327	50.6	19.90	1470.407951
2016	Chongqing	17604.00	1139.95	96.2	21.60	1968.275097
2016	Sichuan	58038.00	4196.27	249	46.90	6831.077729
2016	Guizhou	13677.00	1985.47	103.7	11.20	3097.187276
2016	Yunnan	58601.00	2622.62	235.6	84.80	3633.120926
2016	Tibet	1091.00	233.156	5.9	6.20	172.973117
2016	Shaanxi	13190.00	1702.89	233.1	92.80	2985.7636
2016	Gansu	69915.00	1443.59	93.4	44.20	1778.000993
2016	Qinghai	1939.00	286.834	8.8	6.40	338.797712
2016	Ningxia	2587.00	295.043	40.7	22.50	493.6046989
2016	Xinjiang	27596.00	1238.57	250.2	87.80	2969.696254
2017	Beijing	2726.00	286.756	8.54937	2.20	308.31747
2017	Tianjin	2353.00	231.663	18.0098943	14.00	382.0656193
2017	Hebei	77623.00	3279.22	321.9959	224.60	5373.378759
2017	Shanxi	28831.00	1453.49	111.998382	28.50	1418.7298
2017	Inner Mongolia	35618.00	861.282	235.0396	73.60	2813.535561
2017	Liaoning	57474.00	1315.59	145.4660425	69.30	3851.624713
2017	Jilin	56294.00	1017.73	231.024658	67.60	2064.290852
2017	Heilongjiang	83218.00	1295.02	251.2	146.80	5586.6319
2017	Shanghai	3523.00	268.794	8.896308692	14.50	292.613368

2017	Jiangsu	73167.00	2511.74	303.8503	109.00	7161.2062
2017	Zhejiang	46303.00	1918.25	82.6301	201.60	3093.3568
2017	Anhui	99394.00	2768.65	318.7237	75.50	4597.941841
2017	Fujian	52167.00	1391.04	116.3227	83.60	3947.15903
2017	Jiangxi	87737.00	1998.37	134.9715	29.60	3069.005086
2017	Shandong	140670.00	3933.94	439.9594	157.70	9140.359657
2017	Henan	120713.00	4859.46	706.7	108.80	7562.529755
2017	Hubei	109588.00	2368.68	317.93	66.30	6129.718161
2017	Hunan	116023.00	3010.06	245.25802	44.20	5213.477419
2017	Guangdong	112958.00	3552.46	258.303596	77.70	5969.870828
2017	Guangxi	72495.00	2424.55	263.8308	56.80	4698.709216
2017	Hainan	33408.00	407.851	51.360118	16.20	1488.864369
2017	Chongqing	17467.00	1100.4	95.464922	21.70	1902.467076
2017	Sichuan	55751.00	3996.96	241.9511	46.70	6955.548641
2017	Guizhou	13399.00	1986.69	95.6546	11.40	3413.860099
2017	Yunnan	57675.00	2520.61	231.9402	85.90	3872.92665
2017	Tibet	1076.00	232.504	5.53312	5.60	178.1602908
2017	Shaanxi	13335.00	1636.95	232.1487	93.40	3077.624149
2017	Gansu	51995.00	1308.41	84.49	45.50	1559.64071
2017	Qinghai	1875.00	261.063	8.67	6.40	364.097363
2017	Ningxia	2540.00	275.303	40.7994	22.00	517.4168091
2017	Xinjiang	27670.00	1192.88	250.74	88.30	3326.592739
2018	Beijing	2574.00	282.987	7.3	1.90	296.8
2018	Tianjin	2190.00	221.972	16.9	2.20	390.5
2018	Hebei	61450.00	3168.67	312.4	217.60	5707
2018	Shanxi	26543.00	1406.05	109.6	27.60	1460.6
2018	Inner Mongolia	29585.00	835.348	222.7	79.20	2985.3
2018	Liaoning	55070.00	1276.14	145	62.40	4061.9
2018	Jilin	50991.00	972.486	228.3	67.30	2184.3
2018	Heilongjiang	74182.00	1215.69	245.6	147.40	5624.3
2018	Shanghai	3177.00	269.033	8.4	13.10	289.6
2018	Jiangsu	69600.00	2433.29	292.5	109.40	7192.5
2018	Zhejiang	43725.00	1880.65	77.8	198.80	3157.3
2018	Anhui	94177.00	2694.71	311.8	75.50	4672.7
2018	Fujian	49143.00	1355.14	110.7	82.40	4229.5
2018	Jiangxi	77183.00	1925.25	123.2	30.90	3148.6
2018	Shandong	129882.00	3883.68	420.3	147.50	9397.4
2018	Henan	113603.00	4711.05	692.8	103.90	7757.9
2018	Hubei	103317.00	2307.63	295.8	65.10	6207.8
2018	Hunan	114155.00	2913.43	242.6	44.60	5361.6
2018	Guangdong	93684.00	3480.9	231.3	88.50	6318.1
2018	Guangxi	69714.00	2383.46	255	52.70	4909.2

2018	Hainan	23250.00	401.343	48.4	20.60	1535.7
2018	Chongqing	17191.00	1056.13	93.2	21.40	2052.4
2018	Sichuan	51276.00	3869.27	235.2	46.90	7195.6
2018	Guizhou	11122.00	1928.58	89.5	11.10	3619.5
2018	Yunnan	52591.00	2471.9	217.4	25.40	4108.9
2018	Tibet	982.00	234.348	5.2	3.00	195.5
2018	Shaanxi	12550.00	1586.16	229.6	92.60	3240
2018	Gansu	42864.00	1265.3	83.2	40.80	1659.4
2018	Qinghai	1784.00	250.825	8.3	6.40	405.9
2018	Ningxia	2266.00	268.735	38.4	21.70	575.8
2018	Xinjiang	23732.00	1158.95	255	95.50	3637.8
2019	Beijing	2257.00	277.035	6.2	1.80	281.70446
2019	Tianjin	2171.00	217.307	16.2	2.10	414.3546459
2019	Hebei	57344.00	3070.4	297.3	200.10	6061.463337
2019	Shanxi	25319.00	1353.69	108.4	26.40	1626.54418
2019	Inner Mongolia	27278.00	809.991	218.4	77.40	3176.342172
2019	Liaoning	51074.00	1231.35	139.9	59.90	4368.247668
2019	Jilin	48658.00	939.298	227.1	65.70	2442.725617
2019	Heilongjiang	64267.00	1151.62	223.3	137.40	5929.968
2019	Shanghai	2771.00	267.452	7.5	13.00	284.8425621
2019	Jiangsu	67396.00	2331.52	286.2	108.90	7503.1543
2019	Zhejiang	38572.00	1811.78	72.5	190.50	3355.246618
2019	Anhui	88271.00	2618.34	298	74.70	5162.13384
2019	Fujian	45477.00	1329.22	106.3	81.20	4636.564742
2019	Jiangxi	62701.00	1848.4	115.6	30.10	3481.292609
2019	Shandong	120342.00	3854.43	395.3	137.60	9671.6671
2019	Henan	107231.00	4553.47	666.7	100.10	8541.774606
2019	Hubei	97024.00	2262.34	273.9	63.50	6681.854794
2019	Hunan	105548.00	2825.32	229	44.80	6405.055402
2019	Guangdong	87489.00	3415.74	225.8	85.50	7175.888675
2019	Guangxi	68144.00	2342.54	252	53.40	5498.805563
2019	Hainan	21358.00	404.269	46.3	15.70	1689.399204
2019	Chongqing	16542.00	1012.51	91.1	21.20	2337.806247
2019	Sichuan	46290.00	3727.89	222.8	47.00	7889.347228
2019	Guizhou	9210.00	1867.05	83.2	11.30	3888.989526
2019	Yunnan	47441.00	2419.7	204	26.20	4935.733211
2019	Tibet	802.00	236.419	4.8	3.30	212.807243
2019	Shaanxi	12240.00	1527.12	202.5	93.80	3536.8034
2019	Gansu	41938.00	1236.94	80.9	39.10	1887.575514
2019	Qinghai	1398.00	243.198	6.2	6.60	454.35043
2019	Ningxia	2245.00	260.773	38.4	21.50	584.8468533
2019	Xinjiang	22948.00	1138.5	257.8	94.20	3850.64553

2020	Beijing	2149.00	272.531	6.1	1.70	263.4
2020	Tianjin	1997.00	212.211	15.3	2.00	476.4
2020	Hebei	54289.00	2980.38	285.7	140.50	6742.5
2020	Shanxi	24866.00	1307.7	107.4	26.00	1935.8
2020	Inner Mongolia	23426.00	781.456	207.7	78.10	3472.4
2020	Liaoning	44722.00	1185.44	137.6	59.20	4582.6
2020	Jilin	46930.00	896.266	225.3	65.80	2976
2020	Heilongjiang	60749.00	1090.51	224.2	138.50	6438.1
2020	Shanghai	2644.00	266.216	6.9	14.60	279.8
2020	Jiangsu	65703.00	2251.49	280.8	108.60	7952.6
2020	Zhejiang	36561.00	1800.04	69.6	188.60	3496.9
2020	Anhui	83294.00	2543.95	289.9	75.20	5680.9
2020	Fujian	43163.00	1300.31	100.8	78.40	4901.1
2020	Jiangxi	52708.00	1787.72	108.8	30.00	3820.7
2020	Shandong	114311.00	3755.97	380.9	126.40	10190.6
2020	Henan	102400.00	4430.7	648	97.40	9956.3
2020	Hubei	93143.00	2131.97	267.3	62.80	7303.6
2020	Hunan	101450.00	2740.4	223.7	45.20	7512
2020	Guangdong	83217.00	3263.3	219.8	85.80	7901.9
2020	Guangxi	66026.00	2298.7	247.9	52.80	5913.3
2020	Hainan	19747.00	402.068	42.6	15.00	1821
2020	Chongqing	16205.00	980.029	89.8	21.30	2749.1
2020	Sichuan	42130.00	3622.13	210.8	47.10	9216.4
2020	Guizhou	8423.00	1807.47	78.8	10.80	4358.6
2020	Yunnan	44846.00	2358.64	196.7	30.40	5920.5
2020	Tibet	714.00	235.228	4.4	3.80	233.5
2020	Shaanxi	11951.00	1476.8	201.9	93.40	4056.6
2020	Gansu	40312.00	1194.73	80.4	36.10	2103.6
2020	Qinghai	1233.00	236.726	5.5	6.50	507.1
2020	Ningxia	2174.00	252.638	38.1	21.40	703.1
2020	Xinjiang	21823.00	1125.87	248.2	85.20	4315.6
2021	Beijing	2334.00	273.625	6.3	1.60	269.51385
2021	Tianjin	1742.00	207.598	15.7	2.00	509.2576
2021	Hebei	52691.00	2894.29	276.9	134.50	7018.6745
2021	Shanxi	23594.00	1272.98	105.6	25.80	2134.01854
2021	Inner Mongolia	26692.00	762.96	241.9	80.70	3815.119131
2021	Liaoning	43386.00	1149.87	135	58.70	4927.731
2021	Jilin	45139.00	870.2	223	64.80	2972.324055
2021	Heilongjiang	57090.00	1072.19	239	140.30	6459.9693
2021	Shanghai	2384.00	266.323	6.6	3.10	268.930402
2021	Jiangsu	63547.00	2216.4	275.6	104.30	8279.7242

2021	Zhejiang	34563.00	1788.04	68.3	176.90	3579.211097
2021	Anhui	75993.00	2482.49	284.7	74.40	6004.310139
2021	Fujian	41689.00	1268.66	96.6	78.00	5200.967994
2021	Jiangxi	51629.00	1740.85	108.6	29.90	3998.093588
2021	Shandong	108230.00	3667.3	371	122.20	11468.0094
2021	Henan	97432.00	4304.05	624.7	95.30	10501.2004
2021	Hubei	90468.00	2093.55	262.6	62.40	8296.4405
2021	Hunan	91114.00	2668	219.1	46.00	7662.356887
2021	Guangdong	77440.00	3217.93	212.9	85.40	8305.836987
2021	Guangxi	64233.00	2262.62	251.9	50.20	6524.391281
2021	Hainan	18729.00	398.106	40.8	13.70	2014.794832
2021	Chongqing	16038.00	953.322	89.1	21.30	2935.648866
2021	Sichuan	40974.00	3531.31	207.2	47.00	9383.320013
2021	Guizhou	7048.00	1759.21	76	10.40	4691.96557
2021	Yunnan	41104.00	2295.76	187.3	28.30	6351.816721
2021	Tibet	485.00	232.007	4.3	3.70	255.341017
2021	Shaanxi	11643.00	1438.07	200.7	91.90	4313.4389
2021	Gansu	28107.00	1162.08	77.1	36.00	2439.535823
2021	Qinghai	1069.00	231.541	4.9	6.90	528.529582
2021	Ningxia	2204.00	246.21	37.5	20.50	759.805028
2021	Xinjiang	20388.00	1106.54	240.7	85.80	5143.122509