

The Impact of New Agricultural Cooperatives in Turkey

Introduction and Research Purpose

Agriculture has been an important part of Turkey's economy and culture since the foundation of the republic. In 1960, Agriculture's share of GDP was around 55%, and more than half of the labor force was working in this sector (WB). Currently, the agriculture sector of Turkey carries around 17% of the labor force and around 6% of the country's GDP (TUIK). Although a decrease in the share of GDP can show signals of development, since the country has shifted its resources into industry and service, it is important to sustain a strong agricultural sector to ensure enough nutrients are available for its citizens. Hence, when the government is enacting policy changes in the agriculture sector, selecting correct incentives that give appropriate support to enhance agricultural production is essential for the well being of the country as a whole.

The importance of cooperatives, especially in the agricultural sector, must be noted. The critical difference of a cooperative with any other company is that the revenue made by the cooperative must always go back into the development of the cooperative itself, and the profit must be equally distributed amongst its members. This network of solidarity not only pushes the members to invest and grow their cooperative, but also all of its members to benefit from the growth.

The purpose of this research paper is to understand the place of agricultural cooperatives in Turkey's economy, by examining the impact of different agricultural policies on the economy as a whole. Looking at the changes in the numbers of new agricultural cooperatives and the value they produced, this paper aims to see if the production of agricultural cooperatives had a significant impact on total agricultural production and economic development of Turkey.

History and Literature Review

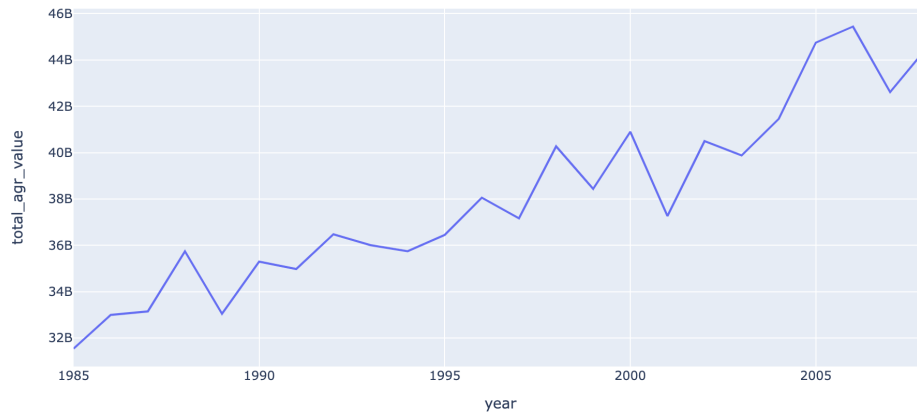
According to the Turkish Ministry of Trade's data, by 2019, there are 1 910 342 active companies in the country, of which 35 728 are cooperatives in total . A third of cooperatives in Turkey are agricultural cooperatives: there are 11 892 agricultural cooperatives and 3 831 196 agricultural cooperative members, showing the importance of networking and solidarity in this sector [Pakdemirli, 2019]. Agriculture is a particularly vulnerable area of production, with a high risk of weather change and pest issues. Therefore, as well as Agricultural Development Cooperatives, there are Agricultural Insurance cooperatives to mitigate the risk factor of agricultural production.

From 1941-1968, there were 670 cooperatives in total in Turkey. Between 1969-1979, this number went up to 7080, then in 1980, it fell to 793 [Okan, 2013]. Legislation about cooperatives was passed in 1961, 1969, and 1972 [Pakdemirli, 2019]. However, until the 2000s, there were no new significant structural legislations passed about cooperatives, signaling how the post coup government's policies were not interested in supporting cooperatives.

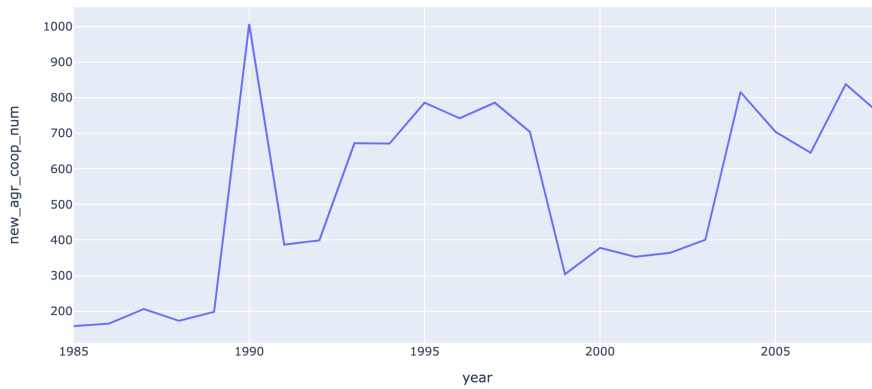
Especially in the 1980s, neoliberal policies were aiming to make the agriculture sector more open to the global free market, so that Turkey could start to compete against global prices. However, the incentives of the US and EU in giving debt relief to Turkey was ingrained in the idea that the US and EU had a surplus of agricultural products post world wars, ranging from produce to seed to compost, that they wanted to be able to sell to developing countries such as Turkey. They agreed to give debt relief support in exchange for changing agriculture policies in Turkey so that farmers here would import seeds and compost from international sellers, who were selling at a lower price than in Turkey [Kaymakçı, 2009]. At a simple glance, it makes sense that Turkey would buy seeds and compost at a lower price from international sellers, but this agreement has made Turkey addicted to foreign resources. The lack of governmental support forces farmers in Turkey to compete with international companies, mainly from the USA and EU, who have extensive structural governmental support and subsidies. To be able to create produce in Turkey, she has to buy the basic materials from outside. The agriculture industry is vulnerable to many changes, including internal and external shocks, therefore, correct governmental incentives can have a great impact on production. This paper aims to show that the bottleneck caused by neoliberal policies have in fact negatively impacted agricultural production in Turkey.

Graphs below show total agricultural value added, the number of newly established agricultural cooperatives, and the value added by new agricultural cooperatives in the country over the years.

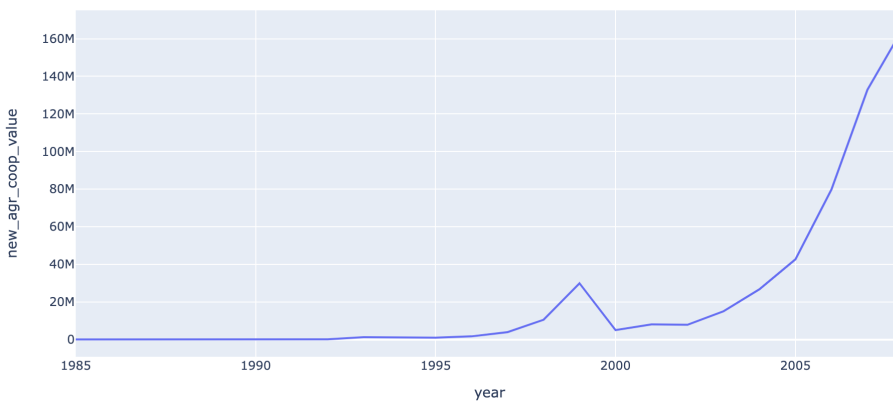
Total Agricultural Value Added



Number of newly established agriculture cooperatives



New Agriculture Cooperative Value Added



Hypothesis

This paper argues that neoliberal policies towards cooperatives negatively impacted the agriculture industry. Of course, the ideal is that a cooperative or any agricultural company does not need any governmental support and can sustain itself to compete internationally. But these agricultural companies in Turkey are competing against companies that have heavy governmental subsidies in the US and EU. Being so blind to this reality is decreasing agricultural production in Turkey, where historically and culturally, agriculture has been an important sector.

Taking the logarithm of value created by new agricultural cooperatives, we can see local maximums in 1989, 1993, and 1997. In 1989, legislation was passed to collect data on cooperatives collectively. Since 2002, there has been a steady growth in this sector, which is also impacted by overall better data collection methods in the country.

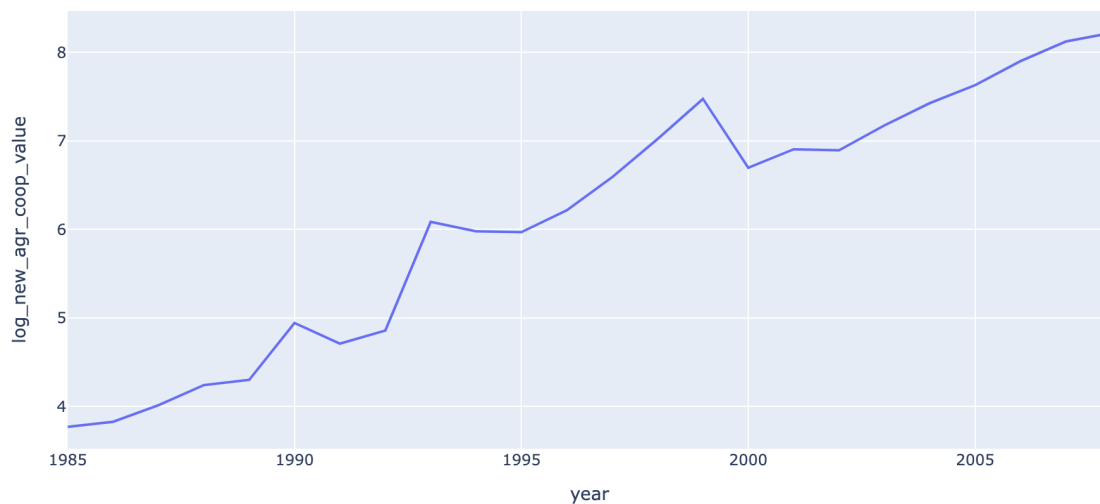
Especially with the advancement of cooperative unions, where many small cooperatives come together to produce as a unit, production by agricultural cooperatives has increased significantly. This paper argues that as more cooperative unions are established, agricultural production and GDP increases.

The Analytical Model

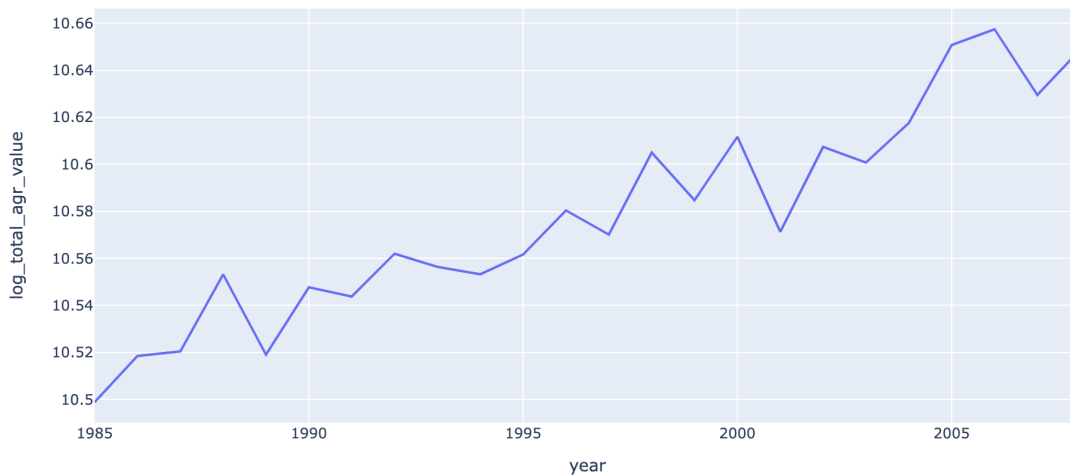
This paper utilizes the Bayesian analytical model to understand the impact of new agricultural cooperatives in the agricultural sector as a whole. The model utilizes the logarithm of total agricultural value created in the country, number of new agricultural cooperatives that opened and the country's GDP.

$$\log_new_agr_coop_value \sim \log_total_agr_value + \log_new_agr_coop_num + \log_gdp$$

Log New Agriculture Cooperative Value Added

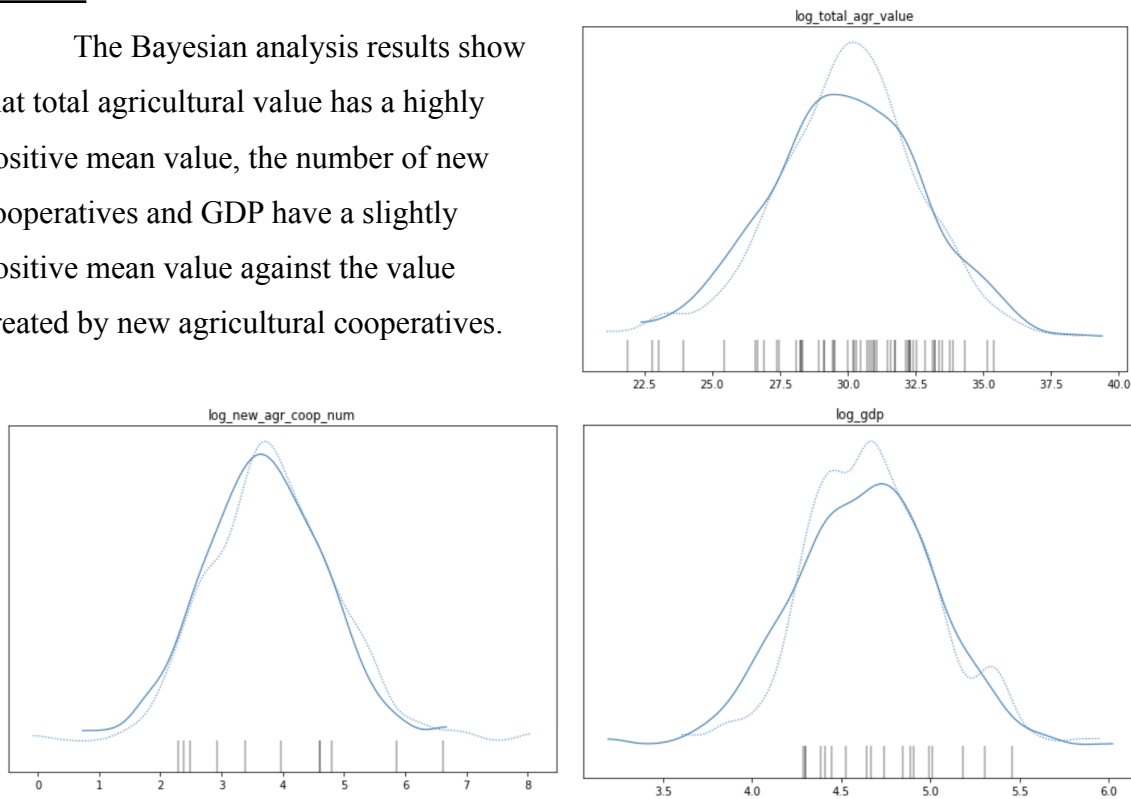


Log Total Agricultural Value Added



Results

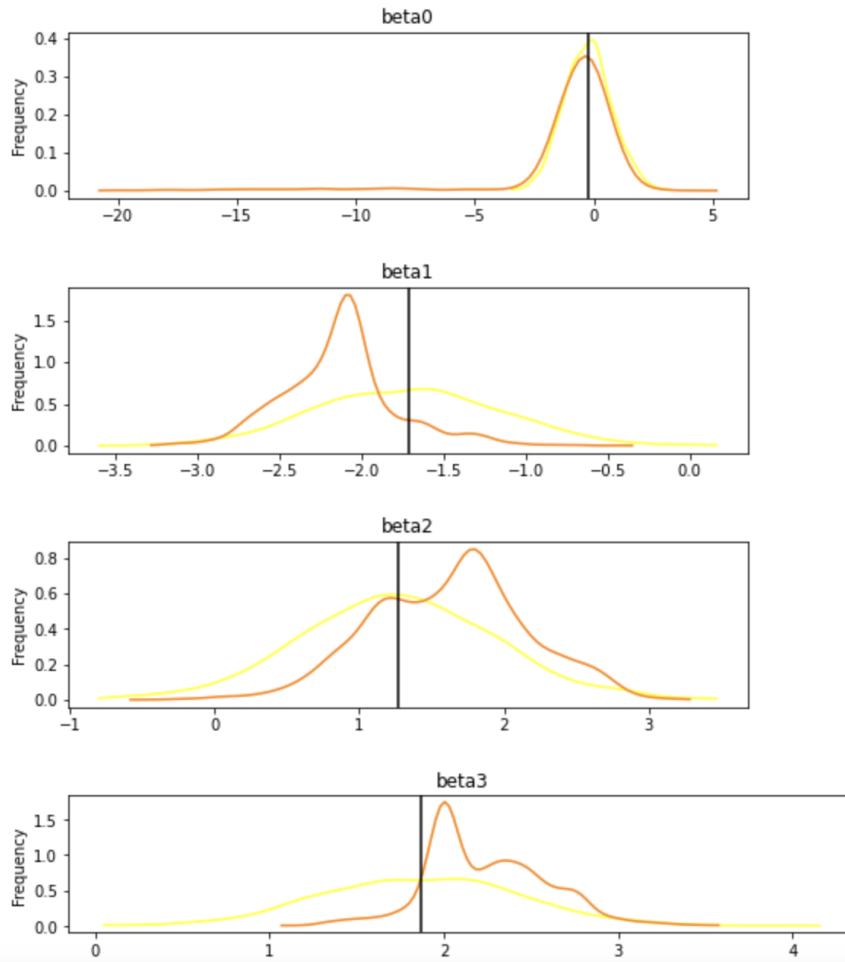
The Bayesian analysis results show that total agricultural value has a highly positive mean value, the number of new cooperatives and GDP have a slightly positive mean value against the value created by new agricultural cooperatives.



	mean	sd	hdi_3%	hdi_97%	mcse_mean	mcse_sd	ess_bulk	ess_tail	r_hat
Intercept	-310.707	29.701	-366.729	-253.025	1.435	1.015	430.0	493.0	1.01
log_total_agr_value	29.952	2.808	24.686	35.434	0.136	0.096	430.0	493.0	1.01
sd	0.632	0.098	0.484	0.835	0.005	0.003	388.0	142.0	1.01

	mean	sd	hdi_3%	hdi_97%	mcse_mean	mcse_sd	ess_bulk	ess_tail	r_hat
Intercept	-3.905	2.701	-8.864	0.967	0.122	0.093	499.0	461.0	1.0
log_new_agr_coop_num	3.775	1.014	1.884	5.578	0.046	0.034	496.0	467.0	1.0
sd	1.196	0.193	0.881	1.518	0.009	0.006	409.0	235.0	1.0

	mean	sd	hdi_3%	hdi_97%	mcse_mean	mcse_sd	ess_bulk	ess_tail	r_hat
Intercept	-46.527	4.342	-55.205	-38.995	0.197	0.139	496.0	586.0	1.00
log_gdp	4.652	0.384	3.981	5.411	0.017	0.012	495.0	625.0	1.00
sd	0.552	0.090	0.408	0.721	0.004	0.003	408.0	461.0	1.01



	mean	sd	hdi_3%	hdi_97%	mcse_mean	mcse_sd	ess_bulk	ess_tail	r_hat
beta0	-0.977	2.728	-3.049	2.360	0.336	0.239	72.0	79.0	1.05
beta1	-2.132	0.351	-2.752	-1.342	0.031	0.023	96.0	91.0	1.22
beta2	1.618	0.540	0.670	2.652	0.157	0.122	12.0	28.0	1.25
beta3	2.241	0.344	1.720	2.992	0.066	0.047	30.0	104.0	1.10

Conclusion and Future Research

The number of new agricultural cooperatives and the total value they created each year from 1985-2008, was the most interesting data found on agricultural cooperatives in Turkey. Limited data availability about agricultural cooperatives in Turkey before the '80s, significantly diminished the extent of this analysis. If more detailed yearly data about the number of cooperatives, number of their members, and total agricultural production value of these cooperatives was available from 1960's to today, a much broader analysis could be conducted.

For future research, cooperative unions can be contacted to collect more local data. Each union has special relationships with the many smaller cooperatives in the area, and can have more historical data about the production in the area that is not available on the governmental level. Further, looking at overall agricultural imports and exports, as well as the import and export data of seeds and composts, would give valuable insights in understanding the change in agricultural production capacity of the country over the years.

References

- Okan, Nedret Durutan and Cuneyt. *An overview of cooperatives in Turkey*, FAO, 2013.
- Pakdemirli, Bekir. *Tarımsal Kooperatiflerin Dünya ve Türkiye'de Mevcut Durumunun Karşılaştırılması*, T.C. Tarım ve Orman Bakanlığı, 2019.
- Kaymakçı, Mustafa. *Türkiye Tarımı Üzerine Notlar*, Yeniden Anadolu ve Rumeli Müdafaa-i Hukuk Yayınları, 2009.
- TUIK, <https://data.tuik.gov.tr/>.
- World Bank, <https://data.worldbank.org/country/TR>.