THE UNCERTAIN EFFECTS OF CHINESE POLICY REFORMS ON MAIZE: THE RETURN OF CHINA AS A MAIZE EXPORTING GIANT?

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Introduction

Since the end of 2015, China has been implementing structural supply-side reforms trying to ensure a sustained growth of GDP in the country. On the agricultural side, one of the most noticeable reforms is the abolition of the minimum maize support price, which was introduced in 1953 as part of its grain procurement system (Shea, 2010). Between 2004 and 2006 China abolished agricultural taxes and introduced subsidies for purchased farmers' inputs (Yu and Jensen, 2010). In addition to this fundamental policy shift, the cereal price food crisis in 2008 prompted the Chinese government to stabilize grains and soybeans domestic prices (Yu and Jensen, 2014). As a response to the 2008 cereal price spikes, China implemented a series of short-run trade policy measures (e.g. imposing export taxes on grain products and lowering import tariffs on food products) aiming at stabilizing internal cereal market prices (Yu and Jensen, 2014). Moreover, China strengthened its support to grain farmers by increasing direct payments (Yu, Elleby, and Zobbe, 2015) and minimum procurement (support) prices (Wu and Zhang, 2016).

China promoted the 2008 policy reforms as a means of raising farm income and maintaining grain self-sufficiency through high domestic prices and substantially guaranteed farm sales. Before implementing its policy reforms in 2008, China had been a net exporter of maize. Between 1990 and 2008 China exported more (see Figure 1) maize than it imported with the sole exception of 1994 and 1995 due to extreme flooding (OECD/FAO, 2016). However, as a result of high domestic prices post-2008 reforms, China became a net importer of maize, profiting from the differential between domestic and international prices and, thus, generating a large volume of public maize stocks (see Figure 2).

Figure 1: Maize imports and exports in China, 2000-2025

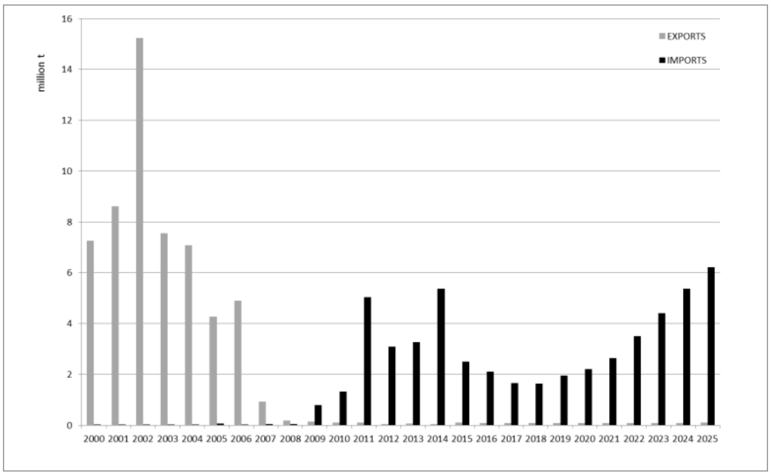
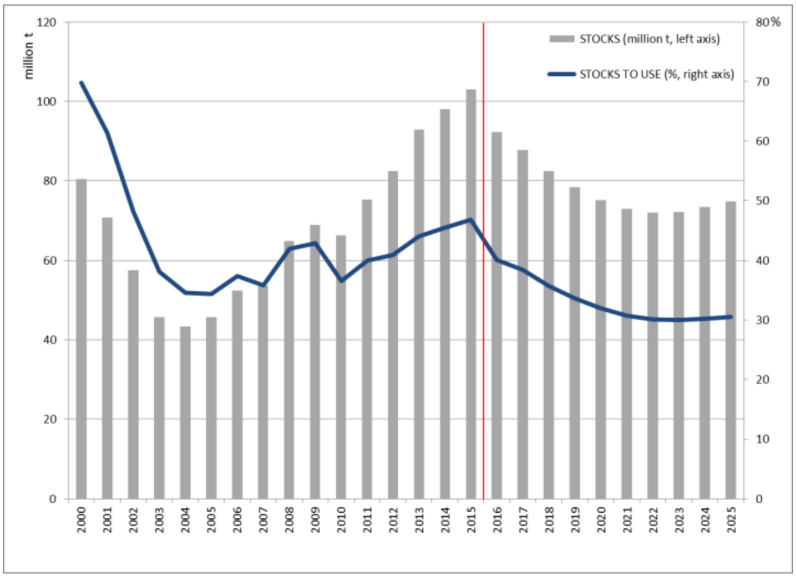


Figure 2: Maize stocks in China and stocks to use ratio, 2000-2025



Note: the red line in the graph above delimits to its right the years included in the Outlook period, in this case 2016-2025.

To regulate the maize inflow, a tariff rate quota of about 7.5 million tons was imposed on imported maize. Thanks to the very low import tariffs applied to maize feed substitutes, this policy allowed for cheaper import substitutes, especially of U.S. origin, to enter the Chinese feed market.[1] For instance, in 2015, China imported 2.5 million tons of maize but also other coarse grains such as barley (7 million tons) and sorghum (8.1 million tons), cassava (6 million tons or about 54% of world trade in 2015) and distilled dried grains (or DDGs, 5.4 million tons or about 40% of world trade in 2015)[2].

In early 2016, China decided to end minimum maize support price and maize stockpiling, starting from the beginning of the marketing year 2016/2017 (on 1st of October 2016). The end of the Chinese maize support policy is an important event for international agricultural markets. The Government 'pledged to introduce more active, forward-looking and well-targeted policies and measures to balance supply and demand' (Ministry of Agriculture of the PRC, 2016). In the same effort, the Government decided to change the way of providing support to farmers, moving towards direct payments and subsidies to production inputs. In the Chinese Agricultural

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[1] It is important to note that in China maize is mainly used for feed (60% of total consumption) or for industrial use (30%). Other less relevant uses are food and biofuels.
[2] At the time of writing this article, China has imposed a 33.8% import tariff on DDGs coming from the US. This decision will potentially diminish even further DDGs imports in China.

Outlook (Ministry of Agriculture of the PRC, 2016), maize price is expected to drop substantively in 2016 and until 2020. After that period, the forecast is to be more closely aligned to international market prices. Imports of maize and its substitutes are also expected to decrease substantially in 2016. The end of the support policy and the release of stocks on the market effectively mean finding place to maize extra supply in the years to come, either domestically or on the foreign market. One of the main drivers of uncertainty is the amount of stocks and the final use of the released stocks. There is as well uncertainty about the quality of the stocks. Depending on these factors, the effects on potential maize substitutes coming from trading partners would be different.

Modelling approach

In this paper, we provide a probabilistic assessment of the potential global trade distortions linked to different policy reforms for maize in China. For this, we use the Aglink-Cosimo model (www.agri-outlook.org) and propose a recursive-dynamic analysis of national and regional agricultural commodity markets over a ten year period (2016-2025). We use the most recent projections developed by the OECD/FAO and the European Commission (OECD/FAO, 2016; European Commission, 2016).

Aglink-Cosimo is a global economic model considering the main agricultural traded commodities, main crop outputs, and government specific policies relevant for agricultural trade worldwide. Country-specific policies are updated periodically to permit timely analyses of important trade topics. Quantities supplied, demanded, and traded, together with prices in agricultural markets, are endogenously determined. The model uses exogenous assumptions on the macroeconomic behavior of variables, such as GDP growth rates, inflation, exchange rates, world oil prices, and population growth (Araujo Enciso et al., 2015). The specific characteristics of Chinese maize market policies are considered in the model and will be revised in the scenario presentation.

Stochastic methodology

Since 2011, researchers working with Aglink-Cosimo (Burrell and Nii-Naate, 2013 and Artavia et al. 2014) have developed a partial stochastic methodology and have used it for analyzing uncertainty in the model by varying key exogenous and endogenous variables. The selection of these key variables is driven by the need to comprise the major sources of uncertainty, deriving from internal and international markets, to EU agricultural markets. In total, 39 country-specific macroeconomic variables, together with a representative crude oil price, and 85 country- and crop-specific yields are treated as uncertain in this partial stochastic framework. The macroeconomic variables include the GDP index and deflators, exchange rates, and consumer prices indexes from ten major trading countries or blocks of countries.

In the spirit of the early contributions mentioned above, we utilize in this paper a slightly different version of those methods. The procedure followed is the latest used by the European Commission to produce the stochastic simulations and it consists of three steps: (i) the extraction of uncertainty for each macroeconomic and yield variable separately; (ii) the simulation of 1 000 sets of possible values for the stochastic variables; and (iii) the execution of the Aglink-Cosimo model for each of the 1 000 alternative sets of possible values of the stochastic variables. These three steps are explained in more detail below.

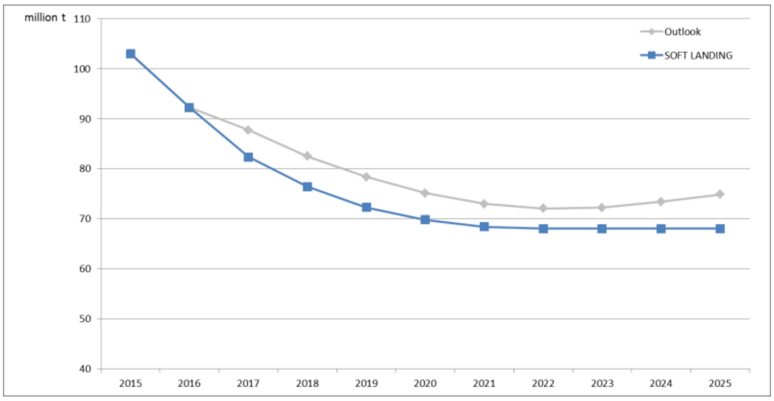
For macroeconomic variables, the first step of uncertainty extraction is based on forecast errors for the period 2003-2015. The correlation (variance/covariance matrix) between the forecast errors in each year for the different variables is considered as a proxy to replicate the correlation between uncertainties originating from macroeconomic variables. It is assumed that stochastic variables follow in each year a multivariate normal distribution. For yields, the uncertainty is based on the deviation between the yield predicted by the Aglink-Cosimo model and the actual yield during the period 1996 to 2016. Correlation between yield errors for given groups of commodities is calculated within regional blocks (e.g. EU-15 or New Member States), but variables are assumed to be independent between different regional blocks. The errors are assumed to follow a multivariate truncated normal distribution with different mean vector and variance/covariance matrix in each regional block. The second step involves simulating 1 000 possible values for the stochastic variables in the future, by replicating the variability determined in the first step, for each of the years of the Outlook period. During this period, both macroeconomic forecast errors and yield variations in a given year are independent of what occurred in the previous year.

The third step involves running the Aglink-Cosimo model for each of the 1 000 alternative 'uncertain' sets of values for both the macroeconomic and yield variables. The model solves in most cases, which shows its robustness to a variety of different shocks, also extreme in some cases.

Scenario setting and presentation

Our scenario analysis is counterfactual to the OECD-FAO 2016-2025 medium-term Outlook (OECD-FAO, 2016). In order to simulate a more rapid reduction of maize stocks in China, we slightly modified the Chinese module of Aglink-Cosimo to make it more responsive to market economy conditions and simulate in this manner an opening to world markets. These modifications hope to reproduce the policy shift that the Chinese government announced in March 2016. This change of policy is simulated by modifying the Chinese maize (import and export) trade elasticities and the maize yield elasticity to reflect a behavior similar to the US maize trade and yield elasticities. We consider a counterfactual scenario on Chinese maize stock depletion, which could be considered as a 'Soft Landing scenario' where maize stocks decrease exogenously at a higher speed than in the baseline (they are set at 95% of the present baseline) until reaching 68 million tons in 2020 and levelling off until the end of the projection period in 2025 (see Figure 3). This level of stock size was selected to be similar to the amounts at the end of 2008, when the maize stockpiling policy was put in place. In turn, 68 million tons are approximately 20 million tons higher than the size appropriate to be prepared for any short-term food security crisis (around 48 million tons).

Figure 3: Representation of deterministic soft-landing scenario of maize stock depletion



At the same time, we simulate the Chinese food self-sufficiency policy by keeping the sum of the areas dedicated to wheat, rice and maize in China at the level of the original baseline. In this manner, we attempt at keeping a strong food self-sufficiency policy in China. In turn, by doing this we only allow a partial adjustment of the Chinese maize acreage, which can only be substituted for rice and wheat. The decrease in price, in response to a change in price caused by the initial stock decrease and due to the inflow of stocks in the market, causes a change in the competitiveness of the maize crop.

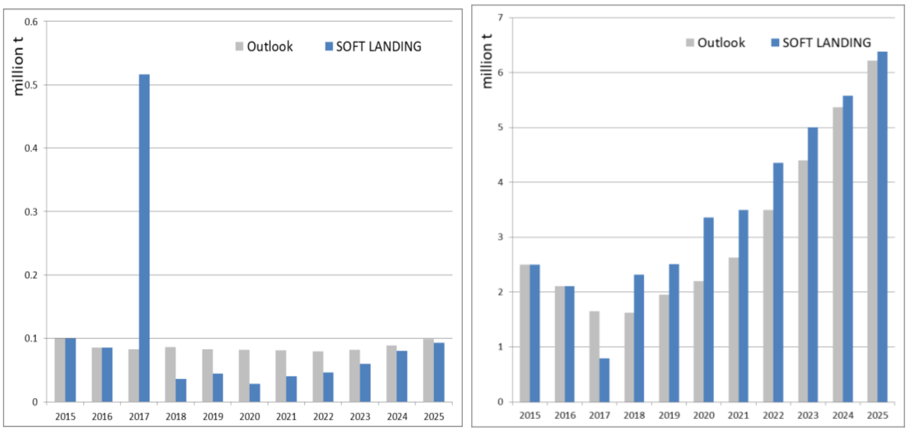
We analyze the effects of the change in the Chinese agricultural policy on global agricultural markets and on the main Chinese cereal trading partners, such as the United States, Europe, or Ukraine. For example, one can expect a decrease in US and Australian feed sorghum exports to China if Chinese maize stockpiles are to be mainly used for feed. The same could also happen in the case of distilled dried grains where the United States is the leading supplier to China. In our analysis we differentiate between short- and medium-term effects. For instance, the return of China as a maize exporter appears only to be an uncertain potential short-run effect of the policy change enactment.

We also consider explicitly the potential effects of uncertainty on Chinese and world agricultural cereal markets stochastically by solving the model with 1000 different combinations of uncertain variables. This shows the potential range of market effects on the baseline and on the Soft Landing scenario when considering uncertainty explicitly in the analysis.

Results from the deterministic scenario analysis

The effects of the deterministic scenario proposed show a five-fold increase in maize exports from China during the first year of the higher speed maize destocking period (2017). However, this increase is only a short-term effect that is not maintained in the medium term (see Figure 4).

Figure 4: Deterministic scenario effects on Chinese maize exports (in the left panel) and imports (in the right panel)

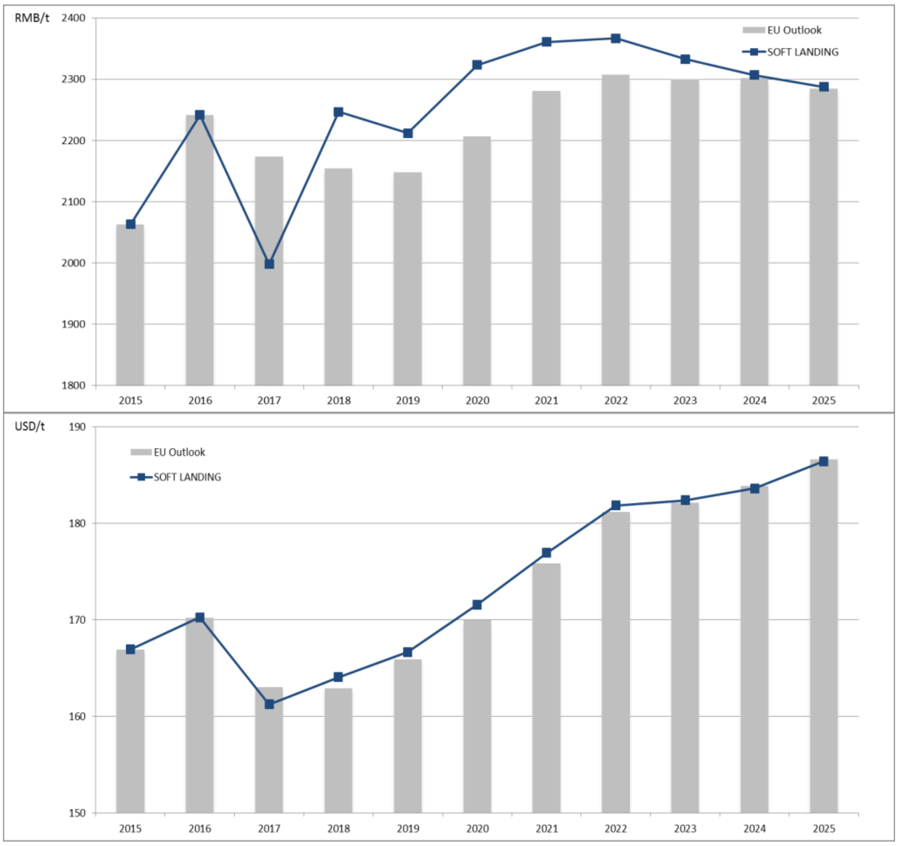


The fact that this sudden increase is not maintained through the Outlook period is because maize exports from China are not as competitive as the ones from their counterparts and demand inside China remains steady. For these reasons the exports converge in the medium term to the deterministic baseline.

On the other hand, Chinese maize imports decrease by almost 52% with respect to the baseline (see Figure 4) in the first year of the deterministic shock proposed (in 2017). However, imports are higher than the baseline for the rest of the duration of the Outlook period. Similar to the exports, the Chinese maize imports converge to the baseline levels, towards the end of the Outlook period.

The effects of the deterministic scenario on internal maize price produce high volatility in the internal market: during the first year of the shock (2017), internal price decreases by slightly more than 8% with respect to the baseline (see Figure 5).

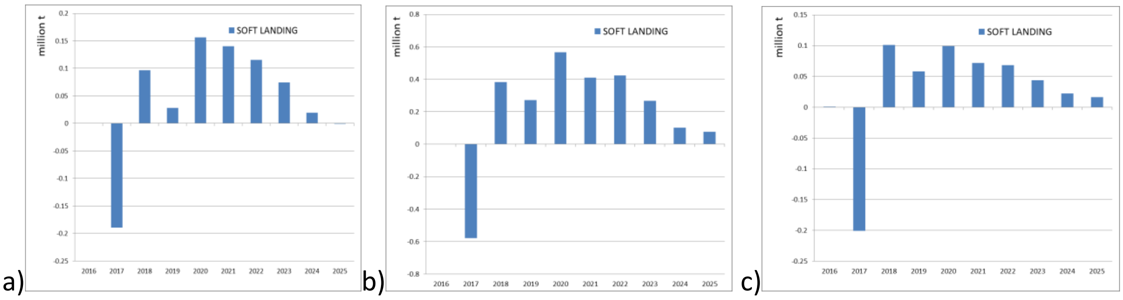
Figure 5: Deterministic scenario effects on internal Chinese (above) and international market (below) maize prices



On the international market, instead, while the behavior during the first year of the shock is similar, the magnitude of the effects is much lower: only slightly more than a 1% decrease is observed. In the following years, this decrease in internal price is more than compensated by a higher price than the baseline in the medium term, until the end of the Outlook period, when internal maize prices stabilize and converge to the baseline. The overcompensation in internal maize price levels visible in the second part of the Outlook period is potentially due to lower quantities of maize available.

The most affected exports from other trading partners to China are for cheaper import substitutes of maize (see Figure 6).

Figure 6: Deterministic scenario effects on exports from main trading partners (a: Europe Maize, b: USA Maize, c: USA Distilled Dried Grains)



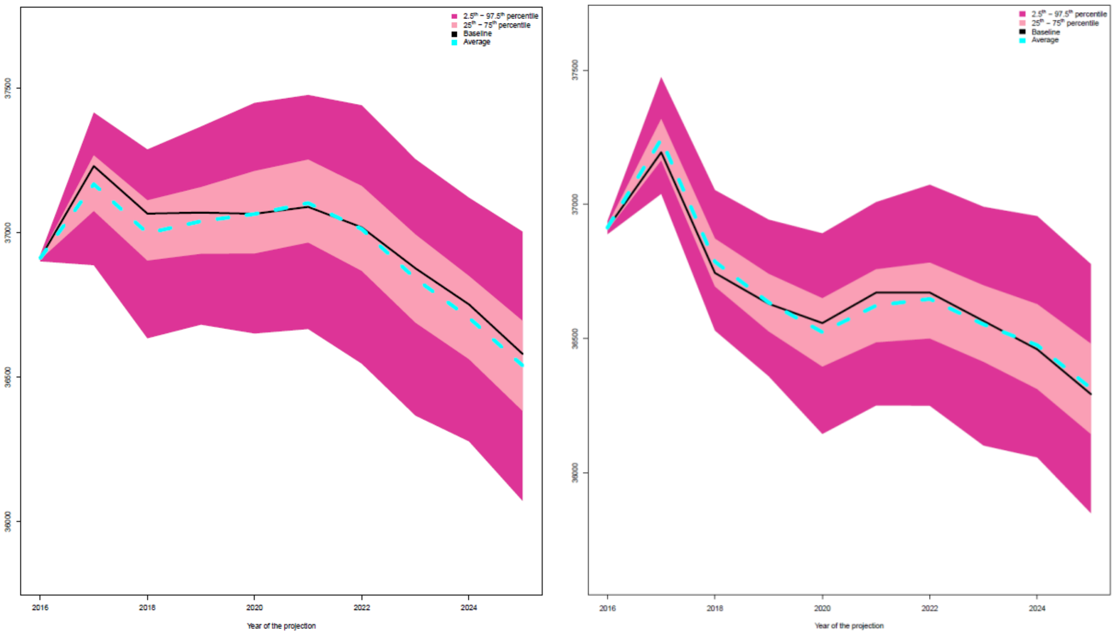
The lower Chinese maize prices and the released stocks of Chinese maize, potentially mainly usable only for feed due to the relatively low quality of stockpiles, decrease the incentives for other countries to export cheap maize-feed substitutes. This may, however, be only a short-term phenomenon, as can be seen in Figure 6. On the other hand, the need to maintain a certain degree of food self-sufficiency implies that the area displacement in the sum of the main food cereals (wheat, maize, and rice) is not as radical as it could have been if the Chinese food self-sufficiency policy would not have been in place. This implies that, in the medium term, exports from the main trading partners pick up again after the first year shock. The most affected export partner is the United States: more than half a million ton of US maize exports are lost during the first year after the shock. These lost quantities are more than compensated in the Outlook period after the first year.

Results from the stochastic scenario analysis

We divide the analysis of the results from the stochastic scenarios into three parts: the first part describes the effects of the uncertainty on the scenario outcomes in terms of the main drivers' means over the years of the medium-term outlook; the second part describes the pairwise differences between the stochastic replications around the baseline and around the deterministic scenario; the third part considers only a part (i.e. a subset) of the stochastic simulations around the baseline and the deterministic scenario to analyze what would happen if the Chinese currency were devaluated.

Stochastic simulations around the baseline for Chinese maize area harvested show a potential decrease in acreage after the beginning year of shock in 2017 (see Figure 7). The width of the stochastic simulations show that results at the end of the Outlook period can be quite different. While Chinese maize acreage at the end of the period could be similar to the acreage at the beginning of the Outlook period (if it were on the higher end of the stochastic simulations' distribution), it could also be as much as 1 million ha lower if it were towards the lower tail of the stochastic simulations' distribution. In the analysis of the stochastic simulations around the deterministic Soft Landing scenario (the right panel of Figure 7), the central portion of the distribution is clearly lower, especially in the years of the Outlook after the beginning of the stock shock in 2017. Means of stochastic simulations in the scenario are lower than the baseline for four consecutive years after the first shock in 2017 by more than 1%, corresponding to approximately half a million hectares, on average, every year.

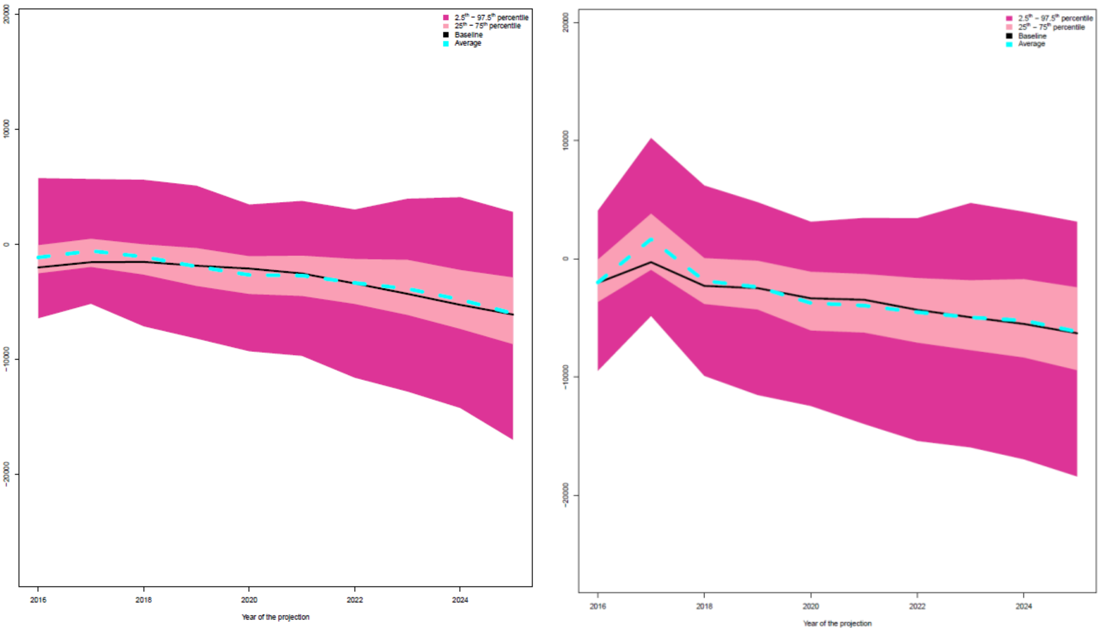
Figure 7: Distributions of yearly stochastic simulations of Chinese maize harvested area (in 1000ha) in baseline (left) and in Soft Landing scenario (right)



During the first year of the shock (2017), exports increase, on average in the stochastic simulations, by more than 175% while imports decrease by approximately only 35% in the stochastic simulations. In the years after the first shock, the exports return to baseline levels on average, while imports are on average more than 30% higher than the baseline in the four years after the beginning shock in 2017 (see Table A.1 in Annex A).

In the stochastic simulations, net trade is negative on average in the year of the first shock 2017 in the baseline (in the left panel of figure 8 it is shown by the dotted cyan line) but it is positive, on average, for the stochastic simulations around the scenario (see Table A.1 in Annex A). The positivity of net trade in the scenario (in the right panel of figure 8 it is shown by the positive value of the dotted cyan line in 2017) implies a short-term net exporting position in Chinese maize net trade, resulting from the stochastic simulations.

Figure 8: Distributions of yearly stochastic simulations of baseline (left) and scenario (right) Chinese maize net trade (in 1000 t)



The results analyzed until now are aggregate distribution summary characteristic results for each projection year: the projection distributions, however, do not show the pairwise comparison of results between each of the 1000 simulations. For this reason, we present, in this second part, distributions of the pairwise absolute differences around the baseline and the scenario projection.

Figure 9: Pairwise absolute difference between scenario and baseline projections, Chinese maize area (in the left panel, in 1000ha) and net trade (in the right panel, in 1000t)

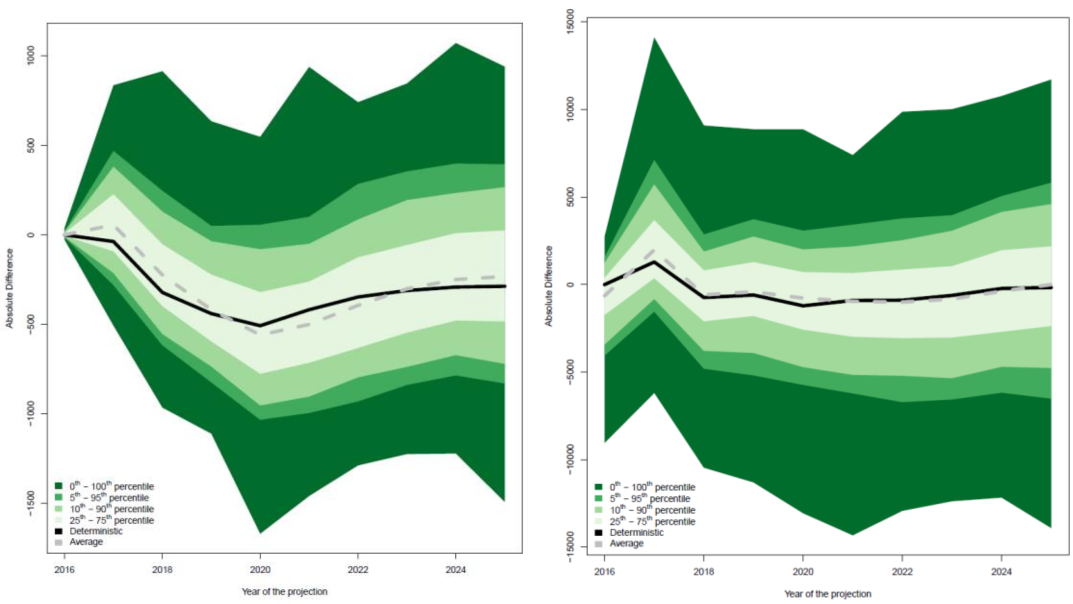


Figure 9 shows a wide range of variation in the Chinese maize area harvested between the stochastic scenario and the baseline projections. The ranges in variation are, however, quite similar to the aggregate ranges shown in Figure 8. This similarity shows that the deviations from the baseline used to produce the stochastic simulations result in variations from the baseline that deviate in the same direction (either above or below the original projection).

Another possibility to analyze the set of 1000 stochastic simulations is to only concentrate on subsets of them for which specific criteria are satisfied. One such subset of critical importance is the subset of all the stochastic simulations when Chinese currency is devaluated: in particular, we consider the 25% of stochastic replications in each year where Chinese currency is most devaluated. This criterion isolates two subsets of replications, around the baseline and around the deterministic scenario.

In these subsets of cases we expect the products from China to be more competitive in the world: the higher competitiveness of products is also true for the case of maize. This could potentially be one of the strongest favorable environments providing export capabilities to Chinese goods. The averages derived from the subset of simulations with the most devaluated Chinese currency have maize area harvested approximately 0.1-0.3% higher than the averages in every year from the full set of stochastic baseline simulations. These percentages translate in higher total maize production. However, these results do not translate in higher trade surplus automatically (see Table 1).

	Variable (means)	Projection	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Subset	China maize area	BASELINE	36912.32	37182.10	37034.42	37067.30	37106.44	37146.30	37067.76	36891.18	36777.24	36608.93
		SCENARIO	36911.94	37305.80	36854.29	36720.14	36630.71	36740.43	36775.21	36691.72	36605.14	36461.03
	China maize exports	BASELINE	822.12	1023.39	828.55	792.27	484.02	591.15	549.64	769.40	647.37	554.13
		SCENARIO	700.78	2315.53	574.85	480.48	247.55	284.63	294.56	512.93	407.00	407.23
	China maize imports	BASELINE	2136.65	1463.72	1891.99	2443.28	2949.56	3182.09	3749.13	4212.98	5616.30	6481.49
		SCENARIO	2742.91	1118.27	3113.53	3507.02	4809.31	4900.87	5862.63	6259.50	7087.47	8200.58
	China maize net trade	BASELINE	-1314.52	-440.33	-1063.44	-1651.01	-2465.54	-2590.94	-3199.50	-3443.58	-4968.93	-5927.36
		SCENARIO	-2042.13	1197.26	-2538.68	-3026.54	-4561.76	-4616.24	-5568.08	-5746.57	-6680.47	-7793.35
Full	China maize area	BASELINE	36911.88	37168.38	36998.78	37039.94	37064.92	37103.04	37012.35	36841.03	36705.55	36539.92
		SCENARIO	36913.59	37243.03	36788.43	36635.06	36526.15	36622.48	36646.99	36554.39	36476.62	36316.84
	China maize exports	BASELINE	820.25	965.00	857.22	688.29	472.35	539.48	550.08	679.43	662.80	517.45
		SCENARIO	684.82	2659.88	860.52	734.12	427.12	477.28	544.19	644.10	690.95	647.21
	China maize imports	BASELINE	1975.34	1547.42	1957.48	2632.52	3146.80	3276.32	3912.38	4553.65	5481.93	6536.51
		SCENARIO	2667.64	1033.04	2664.09	3140.42	4117.18	4435.37	5069.96	5589.79	5894.96	6811.59
	China maize net trade	BASELINE	-1155.09	-582.43	-1100.26	-1944.23	-2674.45	-2736.84	-3362.30	-3874.22	-4819.13	-6019.07
		SCENARIO	-1982.82	1626.84	-1803.57	-2406.29	-3690.05	-3958.09	-4525.77	-4945.69	-5204.01	-6164.38

Table 1: Means of subset of stochastic replications (where, in each year, Chinese currency is most devaluated) and full set of simulations for a list of variables of interest, both for scenario and baseline projections

In the restricted set of stochastic simulations when Chinese currency is devaluated, the Chinese maize net trade is, on average, 7% less negative in the baseline projections than in the full set of stochastic simulations. On the other hand, Chinese maize net trade is 13% more negative under the scenario projections than in the full set of stochastic simulations. In the same way, during the first year of the lower stock scenario (2017), when subsetting stochastic simulations for higher depreciation on RMB, Chinese maize net trade becomes less negative and less positive in the baseline and in the scenario, respectively, than in the whole set of stochastic simulations. This may seem counterintuitive: however, this behavior hints to the fact that a more devaluated Chinese currency (higher exchange rate) is not only important for improving competitiveness of the Chinese products on the world market but it also increases the costs of products from the world market to produce goods in China. Apparently, the negative impact of higher costs on the input side is stronger than the positive impact of higher exports on the production side of trade.

Conclusions

In this article, we provide, firstly, a deterministic analysis of short- and medium-term effects on the world markets from a change in Chinese maize policy with a dynamic recursive agricultural markets model (Aglink-Cosimo). Secondly, we include uncertainty by analyzing 1000 potentially different stochastic scenarios either around the deterministic baseline or around the deterministic scenario. In this second endeavor, we provide an innovative assessment linking uncertainty to alternative policies. Finally, we exploit the stochastic simulations to consider specific aspects of interest: one such case we consider is the presence of a devaluated Chinese currency.

We highlight, in the deterministic scenario analysis, higher exports, but only in the first year of the decrease in stocks, with lower decrease in imports in the same year, resulting in still negative net trade. We also show a sudden decrease in internal market price and in exports to China from other trading partners but only in the first year of the shock. These changes are then diluted to converge to baseline results by the end of the Outlook period. The results from the stochastic simulations confirm similar results for the maize area harvested. However, the analysis shows a wide range of possible results. In particular, we analyze the case of maize area harvested and the case of net trade. While for maize area the results of the potentially different stochastic simulations do not change the qualitative results of the deterministic scenario, in the case of net trade it is possible to obtain short-term positive net trade in China, both in the aggregate results of the distributions and in the distributions of pairwise differences. Finally, we perform a subset analysis focusing on a subset of stochastic simulations, which have a devaluated Chinese currency. These subsets show slightly higher maize net area harvested than in the whole simulations, but not higher net trade. This is consistent with the view that a devaluated currency also implies higher costs of imported inputs.

Summarizing our contributions, this article shows that China, conditional to the assumptions done in this model calibration, will not be a major exporter of maize in the future years to come, but potentially only in the short term. We also show the width and the importance of including uncertainty analysis in explaining potentially different results from different assumptions on macroeconomic and yield variables.

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ANNEX A

Variable (means)	Projection	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
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	SCENARIO	-1982.82	1626.84	-1803.57	-2406.29	-3690.05	-3958.09	-4525.77	-4945.69	-5204.01	-6164.38
China maize price	BASELINE	2312.49	2298.81	2324.61	2325.99	2346.95	2406.65	2419.96	2422.62	2441.33	2429.79
	SCENARIO	2382.08	2159.84	2391.89	2360.45	2416.89	2492.31	2494.66	2480.04	2454.68	2425.94
China maize quantity	BASELINE	215909.18	220937.64	222075.05	225225.43	228474.23	231221.12	233405.50	234899.81	237068.58	238477.82
	SCENARIO	215928.94	221587.49	220193.77	223073.12	225184.12	228464.66	231291.69	233194.03	235689.42	237001.51
China maize sotcks	BASELINE	90315.20	84806.87	79512.44	76558.99	75231.29	73804.34	72928.07	72327.61	72978.29	74346.39
	SCENARIO	92251.03	82353.44	76415.58	72257.57	69811.63	68385.69	68020.88	68020.88	68020.88	68020.88
China maize yield	BASELINE	5.81	5.91	5.96	6.03	6.12	6.19	6.27	6.33	6.42	6.48
	SCENARIO	5.82	5.92	5.94	6.04	6.12	6.20	6.27	6.33	6.42	6.48
China soybean area	BASELINE	6090.56	6165.86	6344.22	6579.83	6731.86	6781.00	6817.05	6857.15	6915.81	6991.02
	SCENARIO	6090.55	6156.21	6364.49	6572.01	6740.86	6761.69	6798.31	6835.51	6895.55	6977.60
China soybean price	BASELINE	3031.78	3193.55	3200.53	3282.24	3262.51	3453.09	3512.81	3446.88	3566.67	3494.69
	SCENARIO	3035.35	3185.17	3201.84	3288.29	3263.39	3466.94	3523.48	3453.73	3565.61	3487.29
China soybean quantity	BASELINE	11120.47	11434.82	11901.75	12469.74	12888.63	13120.92	13352.82	13585.03	13851.17	14179.92
	SCENARIO	11120.45	11417.13	11938.75	12454.99	12906.27	13083.33	13317.25	13542.96	13811.14	14152.41
China soybean yield	BASELINE	1.83	1.85	1.88	1.90	1.91	1.93	1.96	1.98	2.00	2.03
	SCENARIO	1.83	1.85	1.88	1.90	1.91	1.93	1.96	1.98	2.00	2.03
EU maize exports	BASELINE	3000.61	2826.22	2790.51	2825.96	2687.38	2574.62	2493.40	2483.73	2514.13	2524.37
	SCENARIO	3009.63	2763.43	2800.92	2831.21	2704.37	2595.19	2501.79	2484.74	2500.43	2507.63
US DDG exports	BASELINE	9303.05	9630.39	9584.55	9455.28	9726.22	10145.20	10649.37	11116.68	11708.16	12115.13
	SCENARIO	9344.20	9532.61	9636.80	9478.15	9775.42	10207.87	10714.63	11178.95	11732.09	12137.26
US maize exports	BASELINE	46533.24	43437.03	43290.71	43380.82	43858.23	43355.40	43970.92	44753.36	44857.80	46046.89
	SCENARIO	46820.75	42303.61	43633.04	43536.76	44269.74	43694.27	44292.58	45116.54	44869.73	46100.00
US oth.coarse grain exports	BASELINE	5893.42	6128.17	6115.90	6047.70	6191.60	6508.80	7082.33	7677.27	8296.37	8686.17
	SCENARIO	5913.02	6073.51	6153.69	6050.91	6216.93	6526.80	7100.62	7689.74	8289.75	8666.08
World maize price	BASELINE	182.18	179.55	179.45	181.15	180.34	186.78	192.98	196.12	198.87	201.33
	SCENARIO	183.37	177.01	180.40	181.73	181.58	188.33	194.29	196.93	198.80	200.65

Table A.1: Means of all stochastic replications for a list of variables of interest, both for scenario and baseline projections