REVIEW OF RESEARCH

THEORETICAL ISSUES OF STATE INTERVENTIONIST POLICY IN AGRICULTURE

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ABSTRACT:

This paper provides an understanding of the theoretical issues of state interventionist policies and agricultural crisis in India. The theory of state interventionism advocates government intervention in the market process to correct the market failure and promote the general welfare of the masses. In the same spirit after the independence the government of India has been started to intervene in agriculture to correct deficiency of agriculture and promote its development. Then state has been intervened in agriculture in various ways. The land reform policies, APMC Act, Minimum Support Price, Making availability of various inputs to the farmers at subsidized rate, bringing irrigation facilities to the farm land and insurance policies are the indicative instruments of the state for their intervention. But it fails in fetching the desired and intended result from the state interventionist policy. The growth of agriculture has been stagnated to 2 to 4% since independence (Economic survey of India 2017-18). More than 45% of our population directly or indirectly are depending on agriculture and their contribution toward GDP is now stand for 14% only (Economic Survey of India 2017-18).In addition to this Changing climatic conditions and global warming are posing new threats to the agriculture. Identical agricultural policy, assumption of rational behavior of farmers, conflict of interest and unorganized farmers are the theoretical issues which creates barriers in achieving desired goals.

KEYWORDS: *state intervention, welfare, MSP, agriculture growth, Climate change.*

INTRODUCTION :

The year 2017 was marked by several farmers' protests nationwide, with a few turning violent. Last month, in New Delhi, 184 farmer groups came together from Tamil Nadu, Maharashtra, Madhya Pradesh, Uttar Pradesh, Punjab and Telangana to take part in a 'protest walk.' The protest once again highlighted the plight of farmers and the extent of agrarian distress. The agriculture sector is characterized by instability in incomes because of various types of risks involved in production, market and prices. The National Commission of Farmers (2006), chaired by M.S. Swaminathan, had pointed out that something "very serious and terribly wrong is happening in the countryside." The agriculture growth rates have been unsteady in the recent past. While it was 1.5% in 2012-13, it rose to 5.6% in 2013-14. In 2014-15, the rate dipped to (-) 0.2%, while in 2015-16 it was 0.7%. The provisional estimate puts it at 4.9% in 2016-17. The trend reflects the distress in the agriculture sector.

Why the crisis?

The main reason for farm crises is the rising pressure of population on farming and land assets. Government data show the average farm size in India is small, at 1.15 hectare, and since 1970-71, there has been a steady declining trend in land holdings. The small and marginal land holdings (less than 2 hectares)

account for 72% of land holdings, and this predominance of small operational holdings is a major limitation to reaping the benefits of economies of scale. Since small and marginal farmers have little marketable surplus, they are left with low bargaining power and no say over prices. As farmers have been demanding "freedom from debt and remunerative price" through several platforms, they carry on fighting risks in production, weather and disaster, price, credit, market and those in policy. While crop production is always at risk because of pests, diseases, shortage of inputs like seeds and irrigation, which could result in low productivity and declining yield, the lower than remunerative price in the absence of marketing infrastructure and profiteering by middlemen adds to the financial distress of farmers. Also, the predominance of informal sources of credit, mainly through moneylenders, and lack of capital for short term and long term loans have resulted in the absence of stable incomes and profits. Further, it leads to defaults and indebtedness. Uncertain policies and regulations such as those of the Agricultural Produce Market Committee (APMC Act), besides low irrigation coverage, drought, flooding and unseasonal rains, are some other factors that hit farmers hard.

What about prices?

Farmers face price uncertainties due to fluctuations in demand and supply owing to bumper or poor crop production and speculation and hoarding by traders. The government's economic survey for 2016-17 points out that the price risks emanating from an inefficient APMC market are severe for farmers in India since they have very low resilience because of the perishable nature of produce, inability to hold it, hedge in surplus-shortage scenarios or insure against losses.

Lakhwinder Singh, an agriculture expert at Punjabi University, Patiala, who has been mapping rural Punjab for decades, points out that along with the slowdown in agricultural growth, the costs of farm inputs have increased faster than farm produce prices. The cost of capital too has increased manifold over the years. This turned agriculture into an unprofitable occupation and compelled farmers, especially the small and marginal, to borrow costly money from informal sources of credit, which deepened the crises. While the farming sector has its own set of risks, like any other economic activity, to increase and ensure stable flow of income to farmers it is vital to manage and reduce the risks by analysing, categorising and addressing them.

Theoretical Background

The neo-classical theory of State Intervention has the two Fundamental Theorems of Welfare Economics. The First Theorem states that, subject to certain assumptions, a general equilibrium, if it exists, will be Pareto efficient. These assumptions are perfect competition, absence of public goods and externalities, absence of non-convexities in production and consumption and perfect information. The Second Theorem, subject to these assumption, plus the assumption of the availability of lump-sum taxes and transfers to the government, states that any Pareto efficient allocation can be achieved as a solution to a general equilibrium system. The Second Theorem provides a limited role for State Intervention: the State can intervene only by employing lump sum taxes and transfers. Thus the intervention is one, which does not distort decision making on the part of economic agents since lump sum taxes have only an income effect but no substitution effect. It is important that even this limited intervention by the State would be considered an infringement of individual freedom by the libertarians. The government employing lump-sum taxes and transfers relocates individuals on the contract curve and in the process carries out a re-distributive activity. Such a re-distributive activity would be permissible according to the libertarians only if the initial endowments of the better off individuals were acquired illegally. The State could then, invoking the principle of rectification, intervene in order to carry out this limited redistributive activity. All other forms of redistributive activity are illegitimate and taxation is considered by Nozick to be theft (since it extracts money from people they would otherwise have allocated, differently)and slavery (since people are forced to spend a part of their time working for the government)(Barr, 1993).

Neo-classical economics focuses on what are called instances of market failure, as the rationale for State intervention. The State intervenes in the market economy to correct such market failures. The

broad picture of the role of the State that emerges in the neo-classical framework is that of piecemeal intervention in general, markets are assumed to function efficiently i.e. allocate resources efficiently, coupled with localised market failures which calls for a limited State intervention. This, is state intervention in pursuit of efficiency in resource allocation. On the other hand State intervention on grounds of equity is justified only via the second Fundamental Theorem of Welfare Economics. In summary, the existence of the State and a meaningful role for it depends on the pre-existence of markets along with a failure of some segments of the markets.

The neo-classical counter revolution can be divided into three approaches-free market approach, the public choice and Free – market analysis argues that markets alone are efficient- product markets provide the best signals for investments in new activities, labour markets respond to these new industries in appropriate ways; producers know best what to produce and how to produce it efficiently and product factor prices reflect accurate scarcity values of goods and resources now and in the future. Competition is effective, if not perfect technology is freely available and nearly costless to absorb information is also perfect and nearly costless to obtain. Under these circumstances any government intervention in the economy is by definition distortionary and counterproductive. Free market development economists have tended to assume that developing world markets are efficient and that whatever imperfections exists are of little consequence. The only objective of the State in the neo-classical framework, is the maximisation of social welfare. The State will intervene only to correct market inefficiencies which impinge on social welfare. The State thus has no other objectives which might conflict with the objective of maximising the welfare of its constituents viz. the consumers. In the terminology of agency theory, consumers are the principals whose welfare is maximised toy its agent, the State. Since there is no divergence between the objectives of the principal and the agent, there is no question of a conflict between the two. The actions of the agent do not have to be monitored by the principals to ensure that social welfare is being, in fact, maximised. In any case, in the static neo-classical theory there is perfect information, all of which is conveyed by market prices. Thus, problems associated with asymmetry of information between the agent and the principal simply do not arise.

Public Choice theory known as new political economy approach goes even further to argue that government can do nothing right. This is because public choice theory assumes that politicians, bureaucrats, citizens and states act solely from a self-interested perspective using their power and authority of government for their own selfish ends. Citizen use political influence to obtain special benefits from government policies that restrict access to important resources. Politician use government resources to consolidate and maintain positions of power and authority. Bureaucrats and public officials use their positions to extract bribes from rent seeking citizens and to operate protected business on the side. Finally states use their power to confiscate private property from individuals. The net result is not only a misallocation of resources but also a general reduction in individual freedom. Therefore is that minimal government is the best government.

The Market Friendly Approach is a variant on the neoclassical counter revolution associated principally with the 1009 writing of the World Bank and its economists many of whom were more in the free market and public choice camps during the 1980. This approach recognizes that there are many imperfections in developing country product and factor markets and that government do have a key role to play in facilitating the operation of market through 'nonselective' interventions. The market friendly approach differ from free and public choice schools of thought by accepting the notion that market failure are more widespread in developing countries in areas such as investment coordination and environmental outcomes. Moreover phenomena such as missing and incomplete information externalities in skill creation and learning and economies of scale in production are also endemic to markets in developing countries.

TRANSACTIONS COST APPROACH

The transactions costs arising from bounded rationality, opportunism and asset specificity lead to instances of market failure and in such cases as well the coercive powers of the State could help economise on such transactions costs. Thus the neoclassical rationale for State intervention is

generalised via the transactions costs approach. Transactions costs become the general pause of market failures and economising on transactions costs is the prime reason for the existence of the State.

State Intervention in Agriculture

From India's early years, seeking to achieve food security has been an important part of the objectives of both its agricultural and trade policy. The phrase food security has been given different conceptual and practical interpretations over time, whether emphasising national self-sufficiency in food production, economic access to food for certain groups, or other dimensions. The consequent policy approaches have therefore also evolved over time. Before the year 2000 no explicit agricultural policy objectives were published at the central government level, other than the priorities outlined in the five-year plans. An implicit objective, to a large extent driven by the experience of food shortages in the early 1960s, was to pursue self-sufficiency in food production. By the 1990s India had not only become self-sufficient in food grains but produced a surplus of food grains. Although the early five-year plans thus focussed to a very large extent on agriculture, the last one was seeking faster, more inclusive and sustainable growth more broadly by bringing macroeconomic imbalances under control and reversing the economic slowdown while also pushing for structural reform in many areas.

1950s-1980s

In the first few years after India's independence in 1947 growth of agricultural output was achieved mainly by expanding the area under cultivation. Food shortages in the early 1960s made it essential to increase crop productivity and farm output so as to raise national food production. While India in the 1950s met domestic demand for food grains to some extent by imports financed by other countries, uncertainties linked to international political developments brought about a change in such import flows. Although the scope for further expanding the area under cultivation was limited, the advent of the green revolution in the mid-1960s raised crop productivity through improved crop technologies and seed varieties. The government imported and distributed high-yielding varieties of wheat and rice for use in irrigated areas, which was accompanied by an expansion of the extension service and an increase in the use of fertilisers, pesticides, and irrigation. The yields and production of especially wheat and rice increased rapidly. Two institutions with key roles in affecting the prices and distribution mainly of wheat and rice were set up already in 1965, namely the Food Corporation of India (FCI) and the Agricultural Prices Commission, later renamed the Commission for Agricultural Costs and Prices (CACP).

The increasing use of farm inputs other than land underpinned subsequent rapid growth in the industries producing fertiliser, seed and machinery. Government initiatives encouraged increased production and processing of milk. Government funding for agricultural research and extension increased, and many State Agricultural Universities (SAU) were set up. Institutional lending to farmers was expanded by directing the commercial banks, nationalised from 1969, to provide credit to agriculture. New financial institutions were established, such as the National Bank for Agriculture and Rural Development (NABARD) in 1982 and regional rural banks. In order to allow domestic agricultural production to increase, import competition was highly restricted.

1980s-1990s

In the 1980s and 1990s the yield-enhancing green revolution technologies were expanded to additional crops and regions, and new technologies were also adopted in the production of pulses, oilseeds and coarse grain in drier areas. Farm production diversified into higher value commodities, such as fish, poultry, vegetables and fruit. Policy reforms were carried out in the rest of the economy, such as delicensing and deregulation in the manufacturing sector, but they largely bypassed agriculture, partly because of the prevalence of state level regulations in agriculture. Following the 1991 crisis-driven devaluation of the Indian rupee, India's gradual liberalisation of foreign trade basically left the rural sector untouched, including agriculture. From 1980 to 1999 India's GDP in agriculture at constant prices increased by 80%. Over the same time span, gross fixed capital formation by the public sector in

agriculture dropped by about one third whereas subsidies in agriculture increased more than tenfold. Table 3.1 summarises the evolution of agriculture and policy in India from the1950s.

2000 to present

The National Agricultural Policy (NAP), formulated in 2000, aimed at a yearly growth rate of more than 4% in agriculture based on efficient use of resources and conservation of soil, water and biodiversity (Government of India, 2003a).[2] The tenth five-year plan of the Planning Commission covered the years 2002-07 (Government of India, 2002). While recognising the growth orientation of the 2000 NAP, the plan articulated a need for strategies to be differentiated based on the agri-climatic conditions and the land and water resources of different regions, with particular emphasis on developing the eastern and north-eastern regions. It put a priority on raising the cropping intensity on existing agricultural land, developing rural infrastructure that supports not only agriculture but all rural activities, developing and disseminating agricultural technologies, and reconsidering the rules and regulations that govern agricultural trade. The policies relating to public distribution of food would also be considered for change. The National Policy for Farmers (NPF), approved by the Government of India in 2007, identified a need to focus more on the economic well-being of farmers rather than just on production (Government of India, 2007). It listed the accompanying policy actions under headings such as farmers' assets and empowerment, farmers' support services, and special categories of farmers and farming.

The eleventh five-year plan, covering the period 2007-12, saw a need for several actions to accelerate yearly agricultural growth to 4% (Government of India, 2008). These actions would bring technology to farmers, improve the efficiency of investments, increase systems support, rationalise subsidies, diversify production while also protecting food security concerns, and improve the access of the poor to land, credit and skills. In specifically addressing water management and irrigation, the plan saw a need to reduce time delays in constructing irrigation projects, increase irrigation efficiency in both surface water and groundwater systems, adopt an integrated approach to water resources development and conservation, and limit the use of groundwater.

For agriculture in broad terms the twelfth five-year plan for 2012-17 would accelerate the annual growth of agricultural GDP to 4% and allow for a shift of employment out of agriculture, helped by a policy restructuring aimed at supporting the diversification of agriculture and a greater involvement of the private sector in marketing agricultural produce. More specifically, the 2012-17 plan articulated the key drivers of growth in agriculture as comprising

(1) The viability of the farm enterprise and returns to investment that depend on scale, market access, prices and risk,

(2) The availability and dissemination of appropriate technologies that depend on quality of research and extent of skill development,

(3) Expenditure on agriculture and in infrastructure along with a policy aim to improve the functioning of markets and more efficient use of natural resources,

(4) Governance in terms of institutions that make it possible to better deliver services like credit and animal health and quality inputs like seeds, fertilisers, pesticides and farm machinery. The plan also held that certain regional imbalances must be addressed: a national priority in terms of both food security and sustainability would be to fully extend the green revolution to areas of low productivity in India's eastern region, where there is ample ground water, and thereby help to reduce water stress elsewhere.

While such topics as farm output, farmers, resources, and regional balance have figured large in the aims of agricultural policy in India since long ago, concerns about various dimensions of food security, such as availability and affordability of food for consumers, are also important in formulating India's agricultural policy objectives. India's Constitution identifies raising the level of nutrition as a primary duty of government. The tenth five-year plan (2002-07) recognized that, although the country had attained self-sufficiency in food production a decade earlier, this had not resulted in nutritional security of individuals, especially those of vulnerable groups from the poorer segments of the

population. The plan saw the 1997 transition from the Public Distribution System (PDS) to the Targeted Public Distribution System (TPDS) as important in ensuring food at the household level at affordable prices for the poor. Shifting from household food security and freedom from hunger to nutrition security for the family and the individual would involve improving food grain production, increasing production of coarse grains and pulses, and improving the availability of vegetables at an affordable cost. The eleventh plan (2007-12) underlined the need for the TPDS to reduce the leakages (grain not reaching the intended beneficiaries). It also suggested redirecting some subsidies to other welfare schemes in order to achieve better targeting towards the poor, moving towards policies that are specific to individual states or areas, and redefining "poor" for the purpose of the TPDS. The call for action in the twelfth plan (2012-17) recognized similar needs, which would be addressed in the then forthcoming National Food Security Act (NFSA) of 2013.

Analysis of state intervention

Minimum Support Price

Within the marketing structure defined by the ECA and the APMC Acts, the central government's price policy for major agricultural crop commodities seeks to ensure remunerative prices to producers with a view to encouraging higher investment and production and to safeguard the interest of consumers by making available supplies at reasonable prices. The Ministry of Consumer Affairs, Food and Public Distribution (MCAFPD) administers the ECA as it applies to foodstuffs, such as food grains. The Ministry also administers the Prevention of Black-marketing and Maintenance of Supplies of Essential Commodities Act.

The government organizes purchase operations through public and co-operative agencies, which intervene in the market through procurement operations with the objective that market prices do not fall below the Minimum Support Prices (MSPs) fixed by the government. The Food Corporation of India (FCI), under the authority of the Department of Food and Public Distribution (DFPD) of the MCAFPD, is the main agency for executing the food grain policies of the central government. The FCI, set up in 1965 under the Food Corporations Act, 1964, is mandated to (a) procure food grains from farmers at remunerative prices, (b) distribute food grains to consumers through public distribution, particularly to vulnerable sections of society at affordable prices; and (c) to maintain buffer stock of food grains for food security and price stability. The functions of the FCI mainly relate to purchasing, storing, moving, distributing and selling food grains on behalf of the central government. The FCI undertakes some of these functions along with other central and state agencies.

A MSP was first announced for rice in 1965. The central government now announces MSPs for the major crop commodities in each marketing season for *kharif* crops, grown mainly in July-October, and *rabi* crops, grown mainly in October-March. The Commission for Agricultural Costs and Prices (CACP), which is attached to the Ministry of Agriculture and Farmers' Welfare (MAFW), provides its recommendations on MSPs to the Department of Agriculture, Cooperation and Farmers' Welfare (DACFW) of the MAFW. In recommending MSPs, the CACP must take into account the cost of production, overall demand-supply, domestic and international prices, inter-crop price parity, terms of trade between agricultural and non-agricultural sectors, the likely impact of the price policy on the rest of the economy, while ensuring rational utilisation of production resources like land and water. No specific weights attach to any of these factors and the Commission's recommendations involve its judgement on some of these issues.

Table 1.1: Minimum Support Prices (MSPs) for selected crops (INR per tonne)

Crop year	Wheat	Maize	Rice1 (non-basmati)	Soybean (yellow)	Rapeseed and mustard	Groundnut (in shell)	Chickpeas	Sugarcane2	Cotton (H-4 or Long staple)
2000-01	6 100	4 450	7 612	8 650	12 000	12 200	11 000	595	18 250
2001-02	6 200	4 850	7 910	8 850	13 000	13 400	12 000	621	18 750
2002-03	6 200	4 850	7 910	8 850	13 300	13 550	12 200	695	18 750
2003-04	6 300	5 050	8 209	9 300	16 000	14 000	14 000	730	19 250
2004-05	6 400	5 250	8 358	10 000	17 000	15 000	14 250	745	19 600
2005-06	6 500	5 400	8 507	10 100	17 150	15 200	14 350	795	19 800
2006-07	7 500	5 400	8 657	10 200	17 150	15 200	14 450	803	19 900
2007-08	10 000	6 200	9 627	10 500	18 000	15 500	16 000	812	20 300
2008-09	10 800	8 400	12 687	13 900	18 300	21 000	17 300	812	30 000
2009-10	11 000	8 400	14 179	13 900	18 300	21 000	17 600	1 298	30 000
2010-11	11 200	8 800	14 925	14 400	18 500	23 000	21 000	1 391	30 000
2011-12	12 850	9 800	16 119	16 900	25 000	27 000	28 000	1 450	33 000
2012-13	13 500	11 750	18 657	22 400	30 000	37 000	30 000	1 700	39 000
2013-14	14 000	13 100	19 552	25 600	30 500	40 000	31 000	2 100	40 000
2014-15	14 500	13 100	20 299	25 600	31 000	40 000	31 750	2 200	40 500
2015-16	15 250	13 250	21 045	26 000	33 500	40 300	35 000	2 300	41 000
2016-17	16 250	13 650	21 940	27 750	37 000	42 200	40 000	2 300	41 600

Source: 2000-01to 2016-17: Directorate of Economics and Statistics, "Minimum Support Prices"

The 23 crops for which CACP recommended MSP for the 2016-17 season included fourteen *kharif* crops: paddy (two types), jowar (sorghum, two types), bajra (pearl millet), ragi (finger millet), maize, arhar (tur, pigeon pea, *Cajanus cajan*), moong (green gram, *Vigna radiata*), urad (black gram, *Vigna mungo*), groundnut, sunflower seed, soybean (yellow), sesamum, nigerseed, and cotton (two types). They also included six *rabi* crops: wheat, barley, gram (chickpea, *Cicer arietinum)*, lentil, rapeseed and mustard (treated as one), and safflower. CACP recommends prices for three other crops: sugarcane, copra, and jute. In some earlier years the CACP recommended a MSP for tobacco. For sugarcane the price is called a Fair and Remunerative Price (FRP) and setting it is the government's statutory responsibility according to a control order issued under the ECA.

The Cabinet Committee on Economic Affairs (CCEA), chaired by the prime minister, takes into consideration the recommendation of CACP as well as the views of other ministries. The MSP recommended by CACP are mostly approved, sometimes with some minor modifications. The CCEA raised the actual MSP from the recommended MSP or added a bonus to the MSP in 12 out of the 16 years between 2000-01 and 2015-16 (Annex Table 3.A.3). In some years this was done for two MSPs but never for more than five MSPs. In addition, the CCEA decides on the MSP for toria (oilseed related to mustard) on the basis of the normal market price differentials between toria and rapeseed/mustard, which brings to 24 the number of commodities for which the government sets MSPs. In 2015-16 and 2016-17, the CCEA decided to add a bonus in the MSP for pulses above the recommendation of the CACP. Table 3.5 shows the MSPs for a selection of crops.

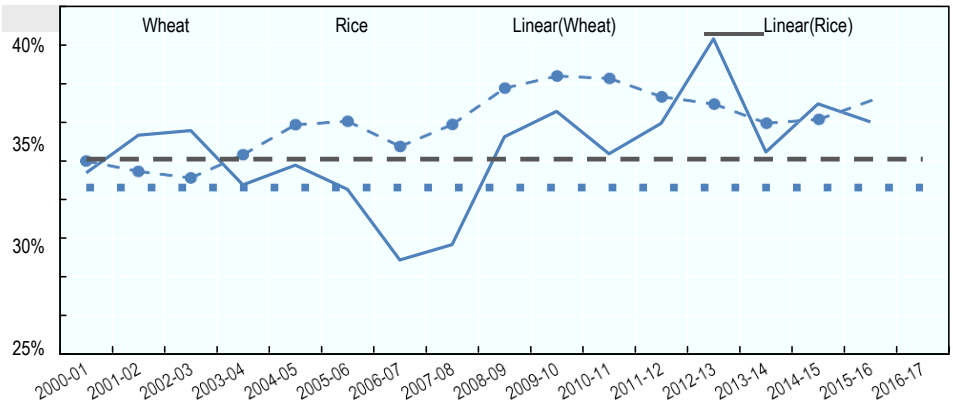
Some states for several years paid a bonus over and above the MSP of wheat and paddy. Annex Table 3.A.4 shows the amounts and extent of such bonuses and one calculation of the amounts involved in 2009-10 to 2013-14. The bonus could correspond to 5-10% of the MSP but could exceed 35% in some cases. The centre started curtailing state level bonus payments in 2014, but the centre itself declared bonuses above the MSP for some crops like pulses.The MSP for many crops has often been set

at a level below the international price. While MSPs and international prices are not strictly comparable without adjusting for such factors as margins and transportation costs, the following examples draw on Government of India (2016o; 2017ad). For wheat, the MSP was set below the international price throughout 2011, 2012, and 2013 and started to exceed the international price only in 2014. For maize, the MSP switched from below to above the international price in late 2013. For paddy, on the other hand, the MSP was set below the international price of paddy in all years in the 2012 to 2016 period. For pulses, such as arhar and urad, the MSPs and the international prices were very close in 2012 to 2014, but the MSPs did not match the subsequent much higher international prices. The MSP for gram remained below the international price in all of 2011 to 2015 (and part of 2016). For soybeans, 2012 and 2014 saw MSPs below the international prices, followed by MSPs higher than international prices in much of 2015 and 2016. For most of these and other crops the domestic wholesale price has tended to exceed the MSP, but there are episodes, usually less than year long, when the domestic wholesale price has stayed below even the MSP.

Procurement of Wheat and Rice as percentage of production

Procurement at MSP involves only a small share of producers. Out of 90.2 million agricultural households in India, 18.7 million reported sales of paddy in July-December 2012 (Government of India, 2015j; Government of India, 2016q). Of those who reported sales of paddy, only 32.2% were aware of any MSP, 25.1% were aware of any procurement agency, and 13.5% actually sold anything to a procurement agency. Among those households which sold paddy to a procurement agency, only 27% of their sales were at the MSP. Against this background it has been recommended to give wide publicity about MSP and procurement agencies in media before procurement starts and to seek ways to increase farmers' confidence about procurement being carried out (Government of India, 2016n). The central government has accepted a recommendation to focus more of its procurement on states in eastern India, where farmers often have no alternative to selling at prices below the MSP (Government of India 2015j; Government of India, 2017b).

Figure 1.1. Procurement of wheat and rice as percentage of production, 2000-01 to 2016-17



Source: Calculated from procurement data in Figure

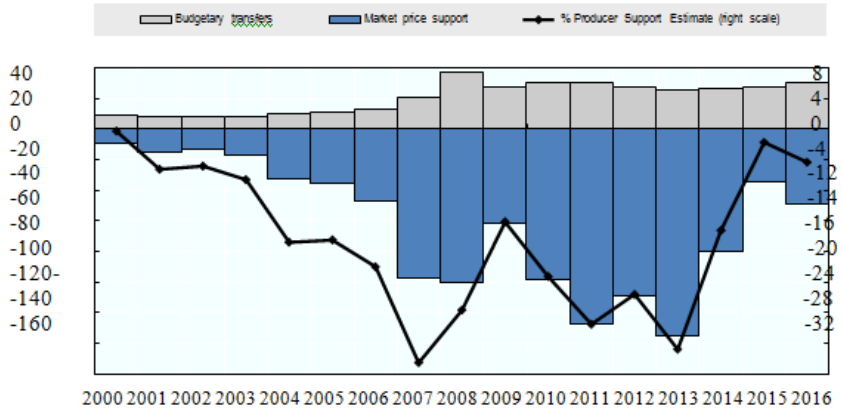
The procurement of wheat and rice by the FCI and state agencies in support of the MSP enables them to meet their responsibilities to maintain buffer stocks. The central government determines the minimum quantities of wheat and rice that must be maintained in each quarter. These stocking norms comprise "food security reserves" for meeting shortfalls in procurement and "operational stocks" for meeting the monthly requirements for targeted public distribution and other welfare schemes. Earlier terminology referred to the stocking norms as buffer norms and strategic reserve.

From 2000-01 to 2015-16 the stocking norms were slowly raised with a few years' interval. The stocks have fluctuated between 20 million tonnes and 80 million tonnes for the total of wheat and rice in that period. Stocks were much above the norms in the early years and then fell below the norms. Later in the period the stocks again rose to a peak much above the norms, from which a decline has been observed in recent years. The actual stocks of wheat and rice vary in a regular pattern through each year, partly a result of most procurement taking place in the harvest season of each crop. The peak total stocks of wheat and rice tend to be seen in June and the lowest has in recent years been in the February-March period for wheat and August-October period for rice.

Farmers Support Estimates

The percentage Producer Support Estimate (%PSE) is the OECD's key indicator to measure the level of support provided to agriculture. It expresses the monetary value of support transfers to agricultural producers as a share of gross farm receipts. Because it is not affected by inflation or differences in the size of the sector, it allows comparisons of the level of producer support over time and between countries. The level of producer support is important because it provides insights into the burden that agricultural policies place on consumers (positive Market Price Support, MPS), producers (negative MPS) and taxpayers (budgetary transfers). In most of the countries studied by the OECD any MPS is positive, often because the support price for a commodity is set higher than the international reference price. The opposite situation, where support prices have been set below international reference prices, is observed in India for many commodities and years. Examples include wheat (not 2016) and maize (not in 2014-16) and non-basmati rice. Producer prices of many commodities have thus also been below their reference prices in all or many years in the 2000-16 period, which generates a negative MPS for each such commodity and year. The sum of MPS amounts across all the 19 individually studied commodities is negative in all years (not counting "other pulses"). This complicates the interpretation of agriculture-wide indicators, such as the %PSE, TSE and %TSE.

Figure 3.13. Level and composition of Producer Support Estimate in India, 2000-16



The support to agricultural producers in India, expressed as a share of gross farm receipts (%PSE) averaged -3.5% in 2000-02 and -6.2% in 2014-16 (Tables 3.11 and 3.12). These negative percentage PSEs are made up of negative and positive components which to some extent offset each other arithmetically and they therefore need to be interpreted carefully. For example, the average figure of -6.2% (INR -1 643 billion) for the period 2014-16 results from two main components. One is budgetary payments, almost exclusively composed of input subsidies, which are equivalent to a positive figure of 6.9% of gross farm receipts (INR 1 814 billion plus some very minor miscellaneous payments). The other component is market price support, which is equivalent to a negative figure of -13.1% of gross farm receipts (INR -3 458 billion).

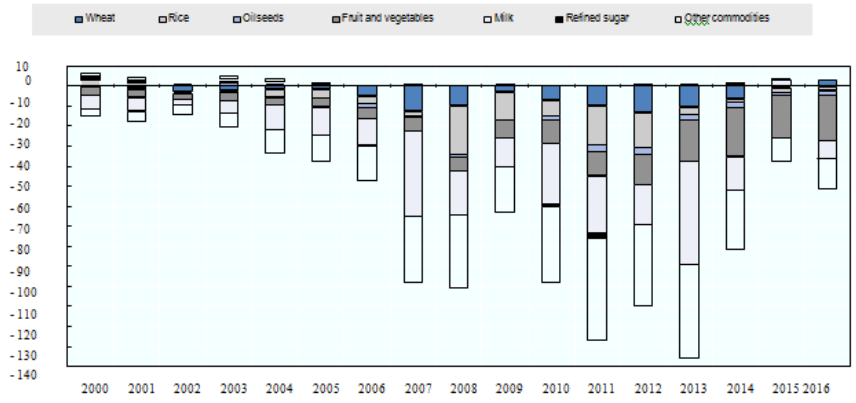
India's %PSE fluctuated markedly in the 2000 to 2016 period, registering a high of zero in 2000, a low of -31% in 2007, followed by large swings and then registering levels much closer to zero in 2015 and 2016 (Figure 3.13). These variations were driven primarily by changes in the relative levels of the domestic and international prices underlying MPS, while input subsidies followed a more steadily increasing trend. The particularly large absolute size of negative MPS in 2011-13 (and to some extent also in 2007 and 2008) coincides with periods of high international commodity prices, which were not or only partially transmitted to the domestic market, due at least in part to India's use of export-impeding measures. For example, export restrictions or export bans applied in several of those years to wheat, non-basmati rice, certain chickpeas, sugar and milk. While the absolute amounts of negative MPS generally increased from 2000 to 2013 (i.e. MPS became more negative), the absolute amounts of negative MPS then declined very rapidly in 2014 and 2015, particularly as a result of a declining reference price for milk. Combined with slowly increasing budgetary transfers this made the post-2000 %PSE attain its smallest absolute negative value in 2015, before it again became somewhat more negative in 2016.

Market Price Support in India by Commodity

A commodity's support indicated by %SCT, whether positive or negative, results from policy interventions which affect farmers' production choices, compared to a situation of no intervention. Policies in India, whether impeding exports or suppressing producer prices through the structure and conduct of the marketing chain, have for many years generated predominantly negative levels of %SCT for most commodities. This pattern has been attenuated in the most recent years, with more commodities, including wheat and maize, registering positive %SCT. Apart from the positive or negative effect of a positive or negative %SCT on the production of a given commodity, the relative levels of support among commodities also translate as incentives for the production of more or less of any single commodity. These effects are confounded with the effects of support for different kinds of inputs and the responsiveness of production of different commodities to such support. Producers' marketing options also play a role in their decisions on what to produce. In some parts of India the government's procurement activities are an important part of the marketing environment that producers face especially for wheat and rice, but less so in other parts of the country. Therefore, as already indicated great care needs to be taken in interpreting a country's

%PSE, or any other aggregate country indicator, when the value reported is the result of large positive and negative components numerically offsetting each other. In this situation, the aggregate indicator is likely to be a poor indicator of policy performance. The policies behind both the negative and the positive components alter the relative prices and therefore the incentives in the sector in different but not offsetting ways.

Figure 3.16. Level and composition of market price support in India by commodity, 2000-16



Source: OECD (2017), "Producer and Consumer Support Estimates", *OECD Agriculture Statistics Database*.

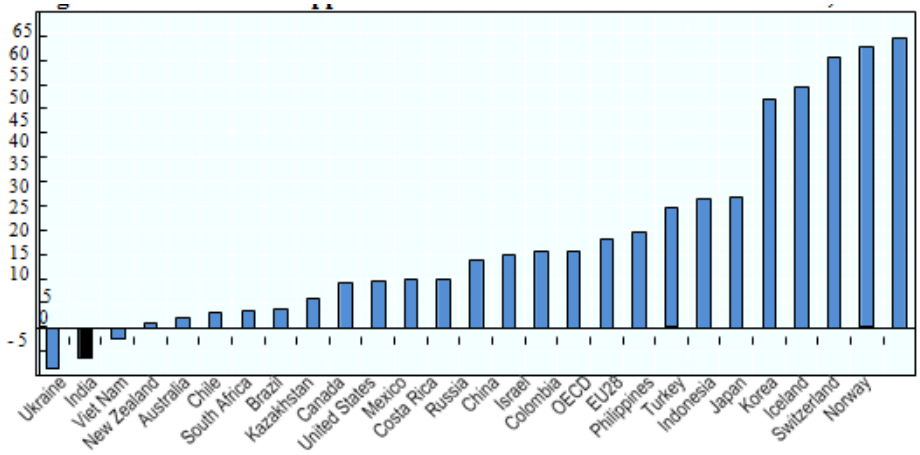
While the numerical indicators for negative price support and positive input subsidies may arithmetically offset each other, the distortions the policies generate are multi-faceted and cumulative. Similarly, in comparing across countries, caution needs to be exercised in interpreting the indicators, since it is less misleading to concentrate on the composition of the indicator than on its single numerical value.

Farmers Support in India and selected Countries

The average level of support in India at -6% was lower than the OECD average of 18% in 2014-16. India along with Ukraine and Viet Nam were the only three countries covered by OECD calculations to show a negative average %PSE in 2014-16 (Figure 3.17).

Compared to the East and Southeast Asian countries in the sample, the level of support to producers in India was much lower than in Japan (47%) and Korea (49%), and lower than in Indonesia (27%), the Philippines (24%) and China (15%) (OECD, 2017).

Figure 3.17. Producer Support Estimates in India and selected countries, 2014-16



Source: OECD (2017), "Producer and Consumer Support Estimates", *OECD Agriculture Statistics Database*

Awareness of MSP

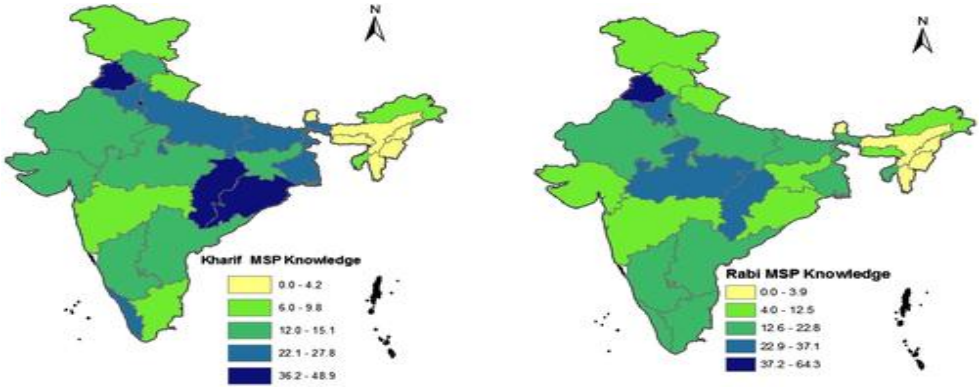
The percentage of farmers who are aware of MSP of crops grown by them. At crop level (each farmer may be growing more than one crop), the awareness stands at around 17 per cent for both kharif and rabi. But MSP is announced only for selected crops in each season and calculating the share to a total number of crops may be erroneous. We have considered subsample of farmers who grow at least one crop for which MSP is announced, and data of such farmers are used in the analysis (except summary statistics). Any household having knowledge of MSP for at least one crop is considered as aware, and the share of such households is 28.30 and 23.13 per cent in rabi and kharif, respectively (Table 2). We can draw inference for India as a whole only after accounting for sampling weights. So we can say that only 23.72 and 20.04 per cent of Indian households are aware of MSP of crops grown by them

Table 1.1: Awareness of MSP

Awareness of MSP	Rabi	Kharif
Awareness at crop level	17.51	17.16
Awareness at household level	28.30	23.13
Awareness at household level with sampling weight	23.72	20.04

Source: NSSO data

Figure 1: State-wise awareness of MSP



Even after more than 40 years after its implementation, less than 25 per cent of farmers knows the MSP of crops they grow. Although MSP is announced for the whole of India, the operation is limited only to few states where the designated government agencies procure the produce from farmers. State wise figures on farmers' knowledge of MSP of crops support our proposition. In states where procurement of food grains through designated agencies is more active, like Punjab, Haryana, Chhattisgarh, Uttar Pradesh and Telangana, the awareness of MSP is also high

CONCLUSION

Government intervention in India is found to provide both negative and positive support to agriculture, with market and trade interventions often depressing prices, while subsidies to fertilisers, water, power and other inputs incentivise their use. This reveals the inherent difficulty in attempting to secure remunerative prices and higher incomes for farmers, while at the same time keeping food prices low for consumers.

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