
Wheat Policy Reform in Egypt: Effects on Production, Prices and Marketing Channels

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In response to a slow-growing agricultural sector and unsustainable levels of food imports projected for the future, the Government of Egypt embarked in 1987 on a series of reforms to convert its state-dominated agricultural sector into a more efficient market-oriented engine of economic growth. The government began the programme by liberalising prices, removing production controls, and introducing market forces into the provision of agricultural goods and services. In the wheat sub-sector, the reforms helped to boost domestic production and introduced the private sector into wheat marketing. The transition towards a fully liberalised wheat marketing system is still under way and will require further changes in government policies.

The objective of this article is to examine the impact of the wheat policy reforms in Egypt on production, prices, and marketing channels. The study explains why the agricultural reforms were initiated and spells out the goals of the programmes and their consequences. It then discusses the remaining questions that need to be addressed to complete the transition to a more dynamic and efficient private-sector-based wheat marketing system. Drawing on the Egyptian reform experience, the article concludes with some lessons and policy implications for other countries.

History of wheat policy in Egypt

Table 1 summarises the evolution of the government's wheat policies from 1941 to the present. In the period from 1941 to 1955, the government slowly began to tighten its control over the production, import, marketing, and distribution of wheat. Its overall objectives were to provide inexpensive food — especially for the vocal and politically active urban poor —, insulate consumers from fluctuations in world food prices, and promote the equitable distribution of food

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and income in Egypt. Reversals in policy were common during the period. For example, by 1955, the government had reduced the wheat production area allocation requirement to 33% of farmers' agricultural land holdings. At the same time, it reimposed a compulsory delivery policy, whereby each farmer had to sell a specific quota of wheat at a fixed price (Scobie, 1981).

Table 1
Evolution of government intervention in the wheat sector

<i>Approx year</i>	<i>Main government policy changes</i>
1941	• Wheat area to occupy 50% of all agricultural land holdings • Subsidisation of consumer prices of all types of bread and flour
1955	• Wheat area reduced to 33% of all agricultural land holdings • Compulsory delivery of wheat quota at fixed prices
1970	• Wheat area reduced to 27.5% of all agricultural land holdings • Fixed producer prices • Control of marketing, distribution, and imports
1976	• Compulsory delivery replaced with optional delivery programme
1985	• Compulsory delivery reinstated
1987	• Mandatory area and delivery quota abolished • Introduction of optional delivery at guaranteed floor prices
1992	• Private sector allowed to import, produce, and trade fino flour^a • Subsidy on fino flour and bread eliminated
1993	• All restrictions on fino flour marketing eliminated • Mills not allowed to produce more than one type of flour
1996	• All domestic wheat procured by the government officially used to make subsidised baladi flour • Private and public millers that produce fino flour required to use imported wheat • Subsidy on shami flour and bread eliminated and shami flour taken off the market

(a) There are three main categories of bread in Egypt: baladi, made of baladi (82% extraction) flour; shami, made of shami (76% extraction) flour; and fino, made of fino (72% extraction) flour.

Agricultural reforms post-1987

The Agricultural Reform Programme (ARP): phase I

Many factors contributed to the initiation of the ARP in 1987. Direct price and marketing controls, inefficient public sector agricultural industries, heavy net taxation of agriculture and an overvalued exchange rate, all worked together to slow economic growth in the agricultural sector. During the early 1980s, average agricultural growth had declined to 1.8% per year, down from an average of 2.8% over the period 1965–80 (World Bank, 1980). The combination of these factors led the government to develop and undertake the major ARP in 1987. The programme was designed to help the government realise its main policy objectives in the agricultural sector, namely, (i) to provide an adequate supply of food to all income groups; (ii) to promote greater self-sufficiency in crop production; (iii) to increase farm income; (iv) to conserve foreign exchange; and (v) to bring the budget deficit under control (Rosen, 1993). The programme consisted of two phases. In the first phase, prices, marketing, delivery controls, and quotas were liberalised to a varying extent for ten major and minor crops; import subsidies were reduced; and markets were opened to private investment.

With respect to wheat, under the ARP wheat area restrictions, quotas and fixed procurement prices were removed in March 1987. Furthermore, in November 1987, the Ministry of Supply established a new more liberal framework for the trading of wheat grain and flour. In addition to removing acreage controls on wheat, the government replaced the compulsory delivery programme (reinstated in 1985) with an optional programme. Rather than determining the procurement price at the harvest period, the procurement price now became a floor price which was announced before the planting season to encourage farmers to plant wheat.

Further agricultural reforms: phase II

The second phase of the reform coincided with the launching of the Economic Reform and Structural Adjustment Programme (ERSAP) in 1991. With the assistance of the IMF, the World Bank, and other international lenders, the ERSAP sought to shift the structure of the Egyptian economy from a heavily state-controlled economic system fraught with distortions into a more efficient market economy in which the private sector could play a major role. Building on the earlier programme, phase II of the ARP sought to liberalise the production, trade and marketing of all remaining crops — principally rice and cotton; to eliminate all remaining input subsidies; and to encourage the private sector to play a greater role in the export of agricultural commodities.

Impact of agricultural reforms on wheat prices

As indicated in Table 2, the reforms led to an increase in the Nominal Protection Coefficient (NPC) from an average of 0.68 in the pre-reform period (1971 to 1987) to an average of 1.05 post-reform (1988 to 1995). This indicates that, whereas in the past farmers had incurred a 32% tax on their output prices, they now received market prices almost equivalent to world prices. Similarly, the difference between market and floor prices declined significantly in the post-reform period. Table 2 shows that, in 1995, market prices were only 6% higher than floor prices, compared with 37% just before the reform period. Procurement prices for wheat increased from LE 167 per ton in 1987 to LE 600 per ton in 1995, while market prices increased from LE 229 to LE 636 per ton. Under the ARP, the government also began to rationalise and reduce the subsidy on wheat flour and bread consumption.

Wheat grain in Egypt was transformed by public or private mills into 72% (or fino) flour for French breads, pastries and baking; 76% (or shami) flour for shami bread production; 82% (or baladi) flour for baladi bread production; and a raw flour (100% extraction rate) to be subsequently sifted by the farmer or village baker for bread production. Albeit heavily subsidised, the wheat flour was priced in such a way that the better the quality (i.e. the lower the extraction ratio) of the flour, the higher the price. The price of flour was also differentiated by the end use and user of the flour. For example, subsidised baladi flour was sold to bakeries at lower prices than to warehouses that sold flour directly to consumers.

In the post-reform period, the prices of baladi flour and bread set by the government were gradually increased. By 1996, the price of baladi flour had reached LE 290 per ton to bakeries and LE 500 per ton to warehouses. On the retail side, the government increased the price of baladi bread from LE 0.02 per loaf in 1988 to LE 0.05 per loaf in 1989, where it has remained until the present, despite significant increases in overall prices. Furthermore, the government also began the process of withdrawing from the subsidisation of most other forms of wheat flour and breads. While subsidisation of baladi flour and bread continues, in 1992 the government phased out the subsidy on fino flour, a 'luxury' item, and in 1996 halted the production of shami flour and bread.

Despite the rise in bread prices in 1988 and the liberalisation of fino flour prices in 1992, consumption of wheat grain and flour continued to grow throughout the 1990s, except for 1991 and 1992, which were characterised by a general economic slump in the country. In 1996, average per capita consumption of wheat and flour was around 200 kg a year, constituting one of the highest levels of per capita wheat consumption in the world. The positive consumption trend of wheat flour and bread (especially the consumption of the heavily subsidised baladi flour and bread) is due to several factors. One is the

Table 2
Procurement, market, farmgate and border wheat prices by year
(1970–95)

<i>Year</i>	<i>Procurement price</i>	<i>Market price (LE/ton)</i>	<i>Farmgate price</i>	<i>Border price</i>	<i>Procurement over wheat average export price</i>	<i>NPC</i>
1970	34	39	38	28		
1971	33	35	35	35	0.63	0.95
1972	33	35	35	35	0.49	0.95
1973	34	38	37	42	0.37	0.86
1974	43	47	46	109	0.43	0.41
1975	49	51	51	85	0.45	0.57
1976	48	47	47	72	0.60	0.62
1977	50	54	54	60	0.64	0.86
1978	52	61	61	65	0.62	0.89
1979	65	64	64	144	0.60	0.42
1980	78	88	87	163	0.58	0.51
1981	80	92	91	185	0.47	0.47
1982	80	82	82	189	0.54	0.41
1983	93	110	109	198	0.67	0.53
1984	120	124	127	216	0.61	0.55
1985	120	172	168	236	0.54	0.69
1986	120	231	225	244	0.76	0.90
1987	167	229	223	233	0.90	0.94
1988	233	459	467	331	0.98	1.32
1989	400	528	533	445	1.18	1.13
1990	467	531	540	402	1.27	1.26
1991	467	568	550	547	0.93	0.99
1992	500	569	527	558	1.05	0.97
1993	500	570	556	572	1.15	0.95
1994	567	574	533	581	1.13	0.94
1995	600	636	565	704	n/a	0.86

Sources: Procurement price: 1970–85, Dethier, 1989; 1986–95, MOTS, 1997; market price: 1970–85, Dethier, 1989; 1986–95, USDA, *Grain and Feed Annual* (various issues); farmgate price: 1970–85, Dethier, 1989; 1986–95, USDA, *Agricultural Situation Annual* (various issues); border price: 1970–78, Dethier, 1989; 1979–95, computed as the sum of wheat average export price and freight rate (International Wheat Council, *World Wheat Statistics*, various issues) multiplied by the black market exchange rate (International Currency Analysis Inc., *World Currency Yearbook*, various issues); wheat average export price: (International Wheat Council, *World Wheat Statistics*, various issues); NPC: net protection coefficient: computed as market price / [Sum of border price and a 5% marketing margin].

continued high population growth rate of over 2% per year. Secondly, the baladi bread retail price is subsidised to the extent that it covers only one-third of its average unit cost of production, making it the cheapest source of calories compared with other food items (Ali and Adams, 1996). Thirdly, in the past few years there has been a general decline in purchasing power which has induced a switch to subsidised bread from other more expensive food items (USDA *Grain and Feed Annual*, 1995). Finally, low bread prices relative to animal feed prices have encouraged farmers to use bread as feed for livestock and poultry.

Impact on wheat area, production, and yields

In general, the agricultural reforms initiated in 1987 were a boon to wheat production. From 1986 to 1996 the wheat area planted doubled, yields increased by 48%, and wheat production almost tripled. These remarkable results are attributed to several factors, including higher relative wheat prices; the increased profitability of wheat-based rotation; the adoption of higher-yielding seed varieties that were also more resistant to heat, drought, and salinity; the implementation of improved cultural practices; and a more liberal policy environment which allowed farmers to base their planting decisions on market forces and provided them with an incentive to adopt modern technology. All these factors reinforced each other in making investment in wheat production a more attractive and lucrative enterprise.

The resulting rise in production also led to a significant improvement in the wheat self-sufficiency ratio from 21% in 1986 to 47% in 1996. Owing to a continued increase in demand, however, higher production has only kept pace with the growth in consumption, requiring the import of 6 to 7 million tonnes of wheat per year. Although the government revises its self-sufficiency target yearly, its goal is clear — to increase the share of domestic production in total wheat consumption. The government also maintains a goal of maximising the quantity of domestic wheat as a share of the total wheat required for its baladi bread subsidy programme. In order to encourage greater domestic production, it has steadily increased its procurement price to international border price levels. In 1995, it obtained 83% of its purchase target of 1.15 million tonnes of domestic wheat through the procurement programme. Its inability to meet its target is a function of: (i) the government's lower procurement price — farmers and traders can obtain higher market prices by selling wheat locally; (ii) farmers' preference for dealing with private traders who provide them with credit and are willing to buy any quantity and collect the commodity at the farm-gate; and (iii) the high demand for wheat in rural areas for both consumption and feed.

Impact on wheat milling and marketing

The partial liberalisation of the wheat trading sector started in 1992 in the fino flour market. Up to then, the government maintained a monopoly over the importation of all types of wheat grain and flour, and controlled the industrial milling sector. Around 80% of all industrial wheat mills in the country belonged to the public sector; the rest were privately owned but were licensed to mill for the government under specific arrangements. In 1992, the government freed the prices of fino flour and bread, and allowed the private sector to import wheat for the production of fino flour. Resale of wheat in excess of the milling needs for fino flour was not permitted. The government also allowed private traders to import fino flour directly. In 1993, all the remaining restrictions on fino flour production and trading were removed, allowing both the public and private sectors to import freely and produce, distribute, and sell fino flour at free market prices. The quotas of fino flour to food processing factories, shops, and bakeries were also eliminated, allowing these outlets to purchase their wheat flour freely in the market.

In 1992/3, only the public sector was equipped with mills capable of generating fino flour; the private sector was therefore forced to contract with these mills to process its flour. The private sector complained, however, about the terms and conditions of the contracts and the unfair competition from public mills because of their comparatively low costs of production. Owing to the high fees that the public companies were charging and the relative profitability of milling wheat, the private sector started to build its own storage and milling facilities in 1996.

In 1995, all fino flour imports were handled by the private sector, though the public and private sectors continue to compete in the domestic production of fino flour. By the end of 1997, nine new private mills had started producing fino flour. Coupled with the flour produced by the public sector, this has created an excess supply of fino flour in the market. The new challenge facing the milling industry is how to tackle the build-up of overcapacity which is pushing fino flour prices down and forcing some of the new mills to operate at 50% capacity.

The choice of the government to continue subsidising baladi flour while liberalising fino flour marketing, has resulted in the leakage of wheat destined for baladi flour into fino flour production. The government either did not foresee the opportunities for such diversion or did not expect such a quick and exuberant response from the private sector. In 1993, therefore, in order to keep wheat obtained at concessional prices for the production of baladi flour from being diverted to fino flour production, a decree was introduced forbidding mills permitted to produce fino flour from producing any other type. Furthermore, given its desire to minimise the costs of wheat imports, the government prefers to use domestic wheat for baladi flour milling and bread production.

Consequently, in 1996, it announced that fino flour could be produced only from imported wheat. Police enforcement was stepped up to detect any attempts to use domestic wheat for the production of fino flour, and the production of subsidised shami flour was cancelled because of its easy and profitable transformation into fino flour. As long as the government is committed to only partial liberalisation of the wheat sector, it will have to continue monitoring and policing the illegal marketing of wheat. However, regulating and monitoring the movement of wheat grain and flour is costly and not very effective. The introduction of regulations to counter the unexpected consequences of liberalisation also creates an uncertain policy environment for the private sector, which is hesitant about investing and expanding its activities for fear of a reversal in government policies. This, in turn, slows down the transition to a private-sector-based wheat marketing system.

Wheat marketing channels before and after the reforms

The institutions. The main institutions involved in the provision and distribution of wheat grain and flour in Egypt include the Ministry of Trade and Supply (MOTS), the Ministry of Agriculture and Land Reclamation (MALR), the General Authority for Supply Commodities (GASC), the Public Company for Silos and Storage (PCSS), the public mills, and the Principal Bank for Development and Agricultural Credit (PBDAC). The GASC is the main organisation under the MOTS responsible for the supply and distribution of wheat grain and flour for the production of subsidised baladi flour and bread. The MOTS, together with the MALR, allocates the quota of wheat flour to be delivered to each governorate, based on its relative population size and its baking capacity. The PCSS is chiefly responsible for the physical storage of imported wheat. The public mills mill the imported and domestic wheat into 82% extraction flour and distribute it to bakeries and warehouses designated by GASC. The PBDAC, its 17 regional banks, and some 4,300 retail outlets are involved in providing credit and inputs and receiving domestic wheat grain from farmers for the government procurement system.

Domestic wheat. Flowcharts 1 and 2 illustrate and summarise the changes in the various marketing channels for wheat grain and flour both before and after 1987. In 1995, approximately 25% of local production was retained by farmers for home consumption, 15% was sold to the MALR as seed and the remaining 60% of production (the marketable surplus) was either delivered directly to government-related institutions such as the co-operatives, PBDAC, or the public mills, or sold to other farmers, consumers, or traders. Private traders are fairly active in the wheat sector. Approximately, 40% of domestic production is sold in the free markets. After purchasing the wheat from farmers, traders deliver the

commodities to public mills, PBDAC, other traders, or sell it in village markets to rural households at market prices. Most traders usually buy and sell wheat in their own village.

Baladi flour. The milling of wheat into flour now falls into two streams, production of baladi flour and fino flour, since shami flour production was eliminated in 1996. For baladi flour, a GASC committee continues to determine the quantity of wheat delivered to either public or private mills contracted with GASC, and the quotas of flour for bakeries and warehouses for the year. Wheat is transferred to public mills from two sources: (i) domestic wheat obtained from PBDAC, the co-operatives, farmers or traders through the optional delivery programme described earlier, and (ii) GASC imported wheat. Alternatively, the GASC also uses the private sector to mill baladi flour. In return for milling the wheat into baladi flour, the private mills receive a fee for their services. The government relies mainly on imported wheat for the production of subsidised baladi flour. In 1995/6, 83% of subsidised baladi bread and flour came from imported sources, and 17% from local production (Ali and Abdel Rahman, 1996; Ali et al., 1997). The baladi flour is picked up by the appropriate bakeries and warehouses.

In 1996, the GASC imported 4.6 million tonnes of wheat and obtained 1 million tonnes of domestic wheat to produce baladi flour. Of the resulting 4.8 million tonnes of baladi flour produced, 71% went to bakeries and 27% to warehouses. Further, of the 3.4 million tonnes delivered to bakeries, 83% and 17% went to urban and rural bakeries respectively, while 32% and 68% of the 1.3 million tonnes of baladi flour distributed to warehouses was sent to urban and rural areas respectively. It can be concluded that more baladi bread is distributed to urban areas, while subsidised flour is channelled more toward rural areas where home bread-making is more widespread and the density of bakeries is lower (Ali and Abdel Rahman, 1996). Of total Egyptian wheat grain imports in 1996, the GASC imported 70%, the public mills 16%, and the private sector 12% (MOTS, 1997).

Fino flour. While the public sector remains the sole player in the provisioning of baladi flour in the post-reform period, the private sector is now a major player in the import, production, and marketing of fino flour. The main restriction on private traders of fino flour is that they may not purchase domestic grain to produce the flour; only imported grain is permitted. Moreover, grain imported by the private sector has to be milled into fino flour; it may not be traded as grain or used for other purposes. Private importers thus purchase the wheat on the international open market, contract with a private or public mill to mill the wheat into flour, and sell the flour at market-determined prices to bakeries, warehouses, and food processors. Alternatively, private importers may import wheat flour and sell it directly without processing. The primary

importer of wheat flour in Egypt is the private sector. Both the GASC and the public mills have stopped importing wheat flour.

For imported wheat, ad valorem tariffs of 1% and 5% are applied on wheat and wheat flour respectively. Other additional fees on wheat flour include a 10% sales tax, a 1% commercial and industrial profit tax, a 1% service charge, and a 5% handling, discharging and transportation fee. The high taxes and fees on imported wheat flour and the higher relative profitability of domestic flour production have reduced wheat flour imports to only 113,000 tonnes, from over 1.5 million tonnes imported a decade earlier, and have encouraged domestic flour production.

Conclusions and policy recommendations for Egypt

Agricultural reform in Egypt has had a dramatic impact on the wheat sector. The removal of area allocation and the compulsory delivery of the wheat quota, the liberalisation of producer prices, and the adoption of higher-yielding varieties and modern production technology have led to increased wheat crop area, yield, and production. The introduction of the private sector into wheat milling and the liberalisation of fino flour prices have induced greater domestic wheat flour production and reduced wheat flour imports.

Some restrictions and subsidies remain, however. All handling, production, transportation, and distribution of baladi flour is under the control of the government, which continues to restrict the use of domestically procured wheat grain for the production of baladi flour and to subsidise baladi flour and bread consumption. The restrictions have created an incentive for the illegal sifting of subsidised baladi flour into fino flour for resale at higher prices. This in turn has created the need to monitor the illegal trade at some cost. Furthermore, the low cost of baladi bread in relation to the higher costs of animal feed has encouraged rural households to feed subsidised baladi bread to their animals.

Tremendous strides have been made under the ERSAP to encourage private sector participation in the production and marketing of fino flour. The private sector is building new, more efficient wheat mills and is producing fino flour in direct competition with the public sector. It has completely taken over the importation of fino flour and the public mills are being restructured and slowly privatised. Indications are strong that the private sector is sufficiently developed to take over the marketing of baladi flour, once all trade and marketing restrictions are removed.

The current subsidy system for baladi flour and bread is set up in such a way that the subsidy is distributed at all levels of the wheat marketing channels, including the milling, bread processing, and consumption levels. This subsidisation prevents the full liberalisation of the wheat marketing system. Alternatively, if the Egyptian government is committed to subsidising bread

prices for the poor, it could target the subsidy to baladi bread at the consumption level and remove all restrictions at the higher marketing channels. Since the intention of the subsidy is to provide a cheap source of bread for the poor, a less distortionary alternative to the current universal price subsidy would be to target the subsidy to the neediest consumers with the help of ration cards, coupons, or magnetic cards that can be distributed to selected segments of the population. For example, the government could distribute a predetermined number of ration cards to the poorest households to be used to buy a limited amount of bread at subsidised prices from bakeries, which would then be reimbursed the difference between the market and the controlled price. In any of these programmes, however, the political and administrative costs of implementation need to be studied very carefully. The advantages of targeting the subsidy to the poorest consumers are that it would lead to potential savings in subsidy expenditure, decrease the amount of leakage of subsidised flour into the free market, and allow the complete liberalisation of the wheat marketing and processing sectors, with a large potential for efficiency gains.

Policy implications for other countries

Many African countries are moving from a state-dominated economic system to a more market-oriented economy in which the private sector is expected to play a more dominant role. Most of them are characterised by an agricultural sector in which the state intervenes heavily in providing inputs to farmers, procuring output at fixed prices, and controlling marketing and trade. These countries are now at a stage where their governments would like to increase the production of their main staple crops, while attempting to keep consumer prices low in order to protect the poor. The Egyptian experience with wheat policy reform provides useful lessons for other developing countries undergoing similar types of reforms.

One of these lessons is that producers and the private sector do respond to liberalisation, and often faster than the government expects. The government should therefore anticipate the potential reaction of the private sector before implementing a new policy to make sure that it will not have to back-track on its reform path, which reduces the credibility of its commitment to liberalisation. Secondly, the consequence of partial liberalisation should be studied very carefully. Allowing the private sector to participate in marketing activities while only partially liberalising a commodity sector often leads to unofficial trading by the private sector in the controlled sector. The government then has to set up an enforcement and monitoring system which is costly and ineffective and creates an uncertain policy environment contrary to the goals of the reforms. Furthermore, within the agricultural sector, reform policies are most effective when the sector is liberalised comprehensively, rather than partially.

Comprehensive reforms improve the allocation of resources and prevent unsustainable substitution between crops. Thirdly, when the objective of a commodity subsidy is to protect the consumer, it is more efficient to target the subsidy directly at the consumption level rather than at all stages of the production and marketing channels. Finally, successful reforms require a change in the existing institutions or the development of new institutions that become the building blocks of the new economic environment. As long as old institutions that were required under a controlled marketing system remain in place, new policies are harder to implement because the existing institutions have a vested interest in maintaining the status quo.

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