

DANISH AGRICULTURE

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INTRODUCTION AND CONCLUSIONS

Danish agriculture is characterised by considerable structural challenges that have increased as there has been a land price bubble in many ways resembling the bubble seen in the Danish housing market. This has pushed up agriculture's debt to a very high level, and many farms have a slight equity base. Almost all debt is made up of variable rate loans, so normalisation of interest rates will have a full impact. The banks have had higher loan impairment charges and losses on lending to agriculture in the wake of the price bubble, and it has been increasingly difficult for agriculture to raise further capital for succession purposes.

In terms of earnings, Danish agriculture is currently in a more favourable position than it has been for many years due, among other factors, to historically low financing costs and relatively good prices for agricultural products. All the same, for a number of years agriculture overall has had an average return on equity of only 2-4 per cent p.a., which is not in tune with the risk incurred. The earnings and debt situations of the individual farms vary substantially.

Danish agriculture has been through a period of surging land prices and subsequent price drops. The period of rising land prices was not used for consolidation; rather it was used to increase borrowings, often pledging the land values as collateral. The level of investment also increased sharply, but investments in farming only corresponded to about half of the growth

in debt. Quite a few farmers left the industry during the period of favourable land prices. According to an estimate by the Department of Food and Resource Economics at the University of Copenhagen, kr. 55 billion was withdrawn from agriculture in connection with changes of ownership in the period 2003-10. As many of the farms changed hands within the family, however, a certain amount of capital remained in the farm.

Agricultural lending accounts for approximately 7 per cent of total lending by banks and mortgage banks. Some smaller banks and DLR Kredit have relatively large exposures to agriculture. This is not the case for the other large institutions. For a period of time, impairment charges, previously called provisions, on loans to agriculture have been significantly above the average for other industries, except building and construction. This means that considerable provisions have already been made for potential future losses. The banks that granted the loans should also be the ones to bear any losses.

So far, owner-farmers have completely dominated agriculture. But new legislation will open up to new forms of ownership, and a number of initiatives have been launched in recent years to attract new capital to agriculture. This is positive, but it does not change the fact that banks and mortgage banks will remain the most important sources of funding for agriculture in the future. It is essential that loans are granted on the basis of sound operational principles and to owners with sufficient capital

rather than based on speculation about rising land prices.

OPERATING RESULT OF AGRICULTURE

Danish agriculture is currently in a more favourable position than it has been for many years, due mainly to historically low financing costs, while the ratio between the agricultural sales prices and the input prices have been increasing, i.e. an improvement in agricultural terms of trade.

Income generation in the industry, measured by gross domestic product at factor cost, is estimated to have been around kr. 40 billion in 2013, cf. Table 1, corresponding to 2.5 per cent of value added in the total economy. Income after remuneration of employees, depreciation and financial items was kr. 13 billion. This is the amount farmers have left as payment for their own labour and return on equity. With normal wages for the farmer this leaves kr. 5-6 billion for return on equity of approximately kr. 190 billion, or a return on equity of 2-4 per cent p.a. The figure includes part-time farms, which have a downward impact on the return on equity,

but without changing the overall picture over a number of years. Even in relatively favourable years in terms of operating conditions, return on equity in agriculture overall is not reasonably in tune with the risk incurred when comparing with return on equity requirements in other parts of the economy. The high risk is reflected e.g. in large fluctuations in the operating result over time.

The operating results of the different farm types vary greatly with mink farmers in particular standing out in recent years in terms of very high earnings. However, mink prices have now fallen somewhat. Within the same farm types, the farms having the best and worst performance also differ considerably, cf. Table 2. The owners of the 10 per cent most indebted farms were technically insolvent at the end of 2012.

Once the sector terms of trade and the level of interest rates are normalised, earnings in agriculture will come under pressure. Historically, the sector terms of trade have fallen by an average of 1.6 per cent per year over the last decades. The only way to neutralise the impact on earnings is to increase productivity, i.e. more efficient utilisation of the production factors. There is a fairly great potential for this,

Key figures from agriculture's financial statements

Table 1

Kr. million	2008	2009	2010	2011	2012	2013*	2014*
Gross domestic product at factor cost	25,523	24,097	27,090	31,837	37,505	39,288	40,881
- Depreciation	8,241	7,675	8,157	8,198	8,158	8,192	8,235
- Paid labour	5,809	6,004	6,307	6,194	6,348	6,437	6,540
= Net residual income	11,473	10,418	12,626	17,445	22,999	24,658	26,106
- Farm rent	3,132	2,952	3,219	3,092	3,401	3,398	3,411
- Ordinary interest expenses, net	13,538	12,310	8,419	8,843	8,337	7,956	8,334
- Realised net loss on financial instruments	4,589	-65	3,796	1,506	776	0	0
= Income after financial items	-9,786	-4,779	-2,808	4,004	10,485	13,305	14,361
Key financial ratios:							
Total factor productivity, index 2005 = 100	106.2	111.3	106.6	109.2	112.3	114.9	116.1
Sector terms of trade, index 2005 = 100	92.3	86.6	94.4	98.2	101.9	101.9	103.4

Note: All farms, i.e. including part-time farms. Data for 2013 and 2014 are forecasts by the Department of Food and Resource Economics. The projection was prepared before the prices of mink pelts began to drop substantially in 2013. "Sector terms of trade" shows the development in agriculture's sales prices compared with the input prices. "Total factor productivity" is the part of labour productivity that cannot be explained by increased capital or labour input.

Source: Danish Agricultural Economy 2013, Department of Food and Resource Economics, University of Copenhagen, December 2013.

Operating result and debt for full-time farms in 2012, deciles according to debt ratio

Table 2

Per farm, kr. 1,000	1	2	3	4	5	6	7	8	9	10
Debt ratio ¹	16	32	41	49	57	64	72	79	88	111
Operating result before interest	856	1,241	1,534	891	1,464	1,206	1,450	1,460	1,553	1,403
Financing expenses	171	262	435	605	794	929	1,109	1,338	1,710	1,964
Subsidies	296	237	384	374	423	447	476	513	590	533
Operating result after interest	981	1,216	1,483	660	1,093	724	817	635	433	-28
Total debt	5,308	7,117	13,224	15,600	19,769	23,415	30,319	30,698	40,489	40,893
Mortgage debt	3,789	5,773	10,723	12,814	15,142	18,035	22,238	21,884	27,212	24,159
Bank debt, etc.	1,358	1,253	2,344	2,418	4,445	5,136	7,886	8,687	12,952	16,573

Note: One decile contains one tenth of all full-time farms.
 Source: Statistics Denmark (individual data) and own calculations.
 1. Debt ratio shows the farm's total debt relative to total assets.

as productivity in the most productive third of the farms is markedly higher than in the bottom third according to the Department of Food and Resource Economics.

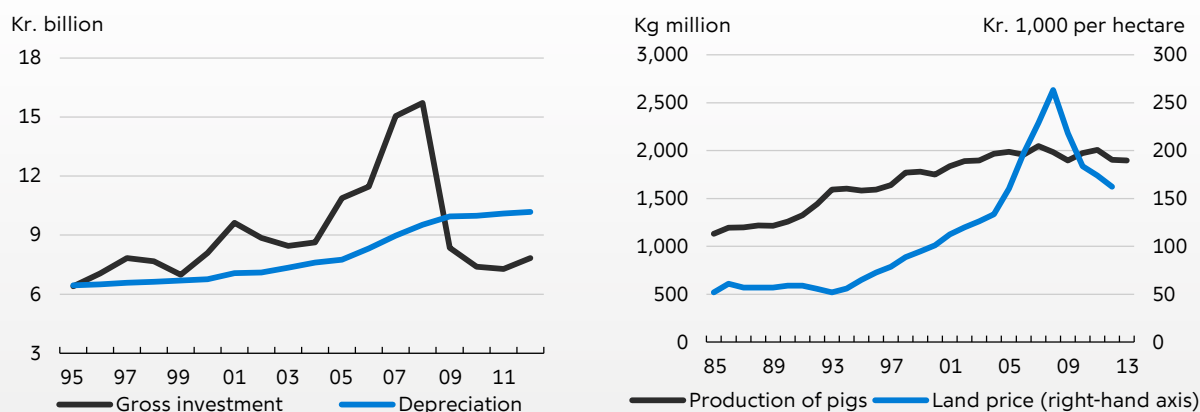
Historically, high productivity growth in agriculture has exerted downward pressure on the prices of agricultural products relative to the general price level and thus contributed to losses in the sector terms of trade. If productivity growth decreases in future, this will reduce the downward pressure on the prices of agricultural products.

The productivity improvements in recent years should, to some extent, be viewed in the light of the sizeable investments during the economic boom, cf. Chart 1, left, but in terms of new investment agriculture is hampered by lower creditworthiness, because debt is already high, cf. below. In recent years, investments in agriculture have been lower than depreciation, leading to erosion of the capital stock.

From 2003 to 2008, land prices rose more than 80 per cent in nominal terms, i.e. even more than house prices, cf. Chart 1, right. Today,

Agriculture's investment and depreciation (left) and land prices and production of pigs (right)

Chart 1



Note: Land prices include buildings.
 Source: Statistics Denmark.

it is obvious that there was a “land price bubble” where land prices per hectare were decoupled from the potential gain from cultivating the land. The surge in the prices of land and farm properties was partly attributable to environmental regulation and partly to an expansion in pig farming during that period. Since 2010, growth in production of pigs has flattened, however, and land prices have fallen somewhat again, but they are still considerably higher than in the early 2000s. Land prices still remain high given that the return on equity is only 2-4 per cent, a level that will come under further pressure if interest rates are normalised. Add to this that EU subsidies will be reduced as a result of the agricultural subsidy reform that has already been adopted, which will affect the large farms in particular. The assessment of the future rate of return on land is highly sensitive to assumptions regarding the size of future capital gains.

FINANCING OF AGRICULTURE

The surging land prices from 2003 were widely pledged as collateral for further debt. Agriculture’s debt to banks and mortgage banks rose by approximately kr. 150 billion from 2003 to 2010, having almost doubled. In subsequent years, the debt was fairly stable, amounting to kr. 350 billion at the end of 2013, cf. Chart 2,

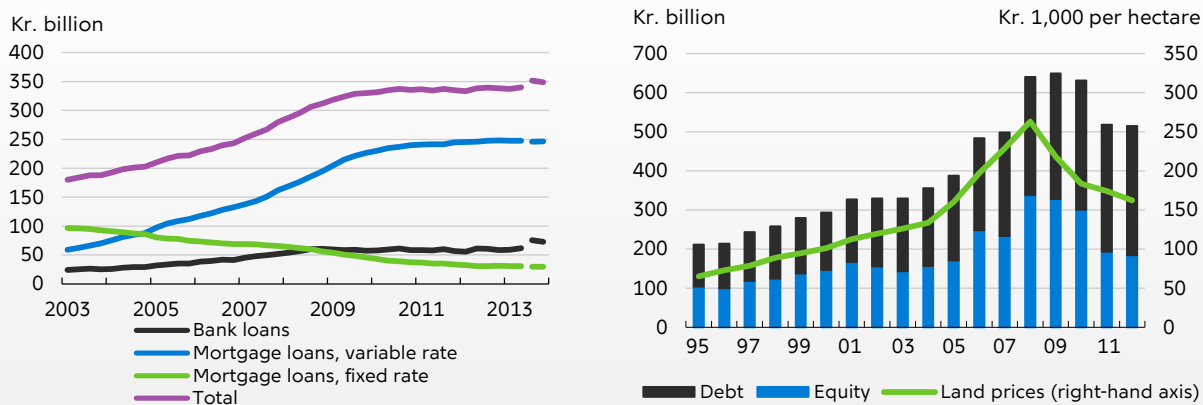
left. Of this sum, part-time farms made up kr. 70 billion. The debt ratio in agriculture rose from 54 per cent in 2008, when land prices peaked, to 64 per cent in 2012, cf. Chart 2, right. These are average numbers, and there is great variation among the individual farms.

Full-time farms with a low equity base and thus a low solvency account for a large part of the debt, cf. Chart 3. A large part of these farms also have a negative operating result. If interest rates increase by e.g. 2 percentage points, the share of total debt accounted for by full-time farms with low solvency and a negative operating result will increase by 13 percentage points, reflecting agriculture’s high interest rate sensitivity, as almost all debt is made up of variable rate loans. Hence, an interest increase will have a full impact.

If the average debt ratio is to be reduced to the level seen before the surge in land prices, e.g. by 10 percentage points, the debt is to be reduced by around kr. 55 billion, provided that property values and land prices remain unchanged. This should be weighed against the fact that the residual amount for return on equity was kr. 5 billion in 2013, and that the level of interest rates is very low. This means that for many years to come a considerable share of earnings will have to be used to reduce the debt incurred, and less funds will therefore be available to finance investments – investments

Agriculture’s debt to banks and mortgage banks (left) and agriculture’s financing structure and land prices (right)

Chart 2

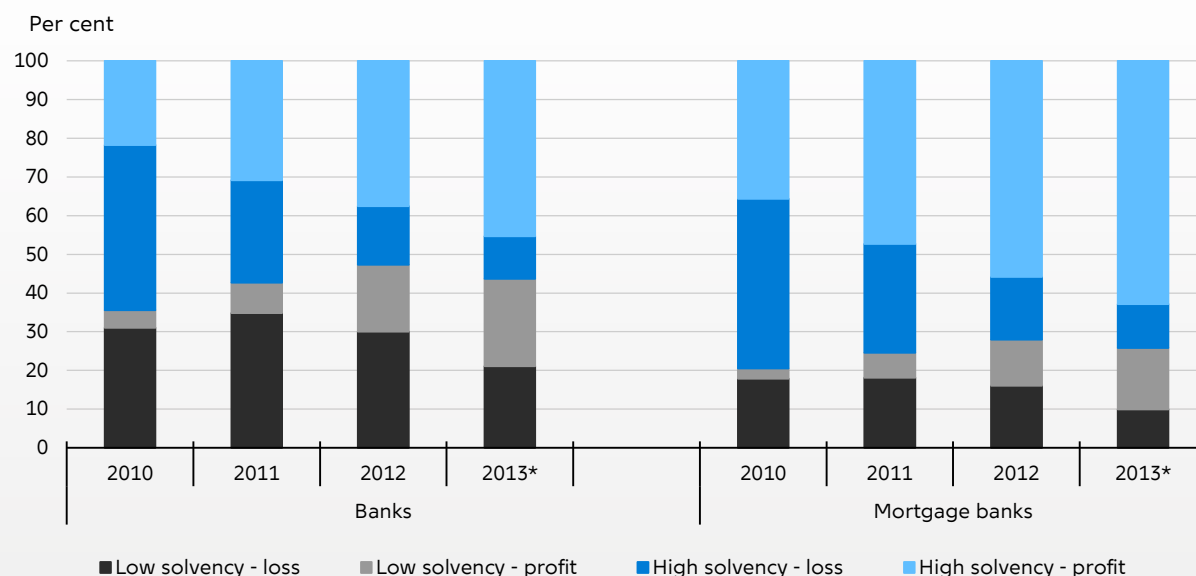


Note: Data for Q3 and Q4 2013 in the left-hand chart are based on new statistics for banks and mortgage banks. The data includes part-time farms whose gross debt was kr. 70 billion at end-2012.

Source: Danmarks Nationalbank (left) and Statistics Denmark, financial statements (right).

Agriculture's debt to banks and mortgage banks by solvency and operating result

Chart 3



Note: Full-time farms. Low solvency is defined as farms with equity amounting to less than 15 per cent of assets. 2013* has been estimated using the sample of farm financial statements from 2012 on which Statistic Denmark's latest accounts statistics for agriculture are based.
Source: Statistics Denmark (individual data) and own calculations.

that are necessary to increase production and the return on equity. The land price bubble and the associated extensive borrowing have put agriculture in a difficult situation. Realising the losses now and reducing the debt would improve the future options of financing investment out of current income.

In the period 2003-10, gross investments corresponded to around half of the gross debt incurred over the period. Many farmers sold their farms during the period of high land prices. According to an estimate by the Department of Food and Resource Economics, kr. 55 billion was withdrawn from agriculture in connection with changes of ownership, many of which took place within the family. Furthermore, part of the increase in land and property prices was pledged as collateral for loans to buy tangible and financial assets other than farm properties, equipment or fixtures.

Some of the loans were in Swiss francs. For some years this seemed to pay off, as the interest rate was lower in Swiss francs than in Danish kroner and the exchange rate was roughly unchanged, but borrowers incurred an exchange rate risk as the financing expenses were in Swiss francs and the operating income

was in Danish kroner. When Swiss francs began to appreciate in the wake of the financial crisis, borrowers suffered an exchange rate loss. Furthermore, many farmers entered into other types of financial contracts, e.g. swaps. In the period 2008-11, Danish farmers lost over kr. 10 billion on such transactions, cf. Table 1.

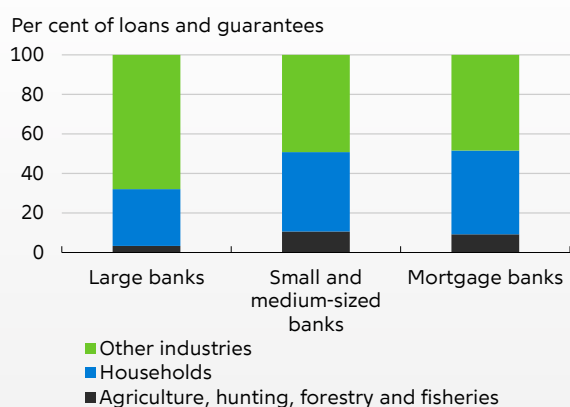
BANKS' AND MORTGAGE BANKS' EXPOSURES TO AGRICULTURE

Agricultural lending accounts for approximately 7 per cent of total lending by banks and mortgage banks, cf. Chart 4. For the large banks, the percentage is somewhat lower as they account for a mere 3 per cent of the banks' total lending and guarantees. A few smaller banks and DLR Kredit are considerably more exposed.

The loan impairment ratio of the banks' lending to agriculture was 3 per cent in 2013. This is slightly lower than in the preceding years, reflecting more favourable agricultural operating conditions. However, the level of the banks' loan impairment charges on lending to agriculture is still substantially higher than the loan impairment charges on their total lending,

Loans and guarantees broken down by industry at end-2013

Chart 4



Note: Large banks correspond to banks in the Danish Financial Supervisory Authority's group 1, while small and medium-sized banks correspond to banks in the Danish Financial Supervisory Authority's groups 2 and 3.

Source: Danish Financial Supervisory Authority, Danmarks Nationalbank and own calculations.

which amounted to 0.8 per cent in 2013. Overall, 13 per cent of the banks' lending to agriculture has been written down, corresponding to kr. 12.4 billion. Although the losses on the banks' lending to agriculture increased steadily from kr. 0.5 billion in 2010 to kr. 1.4 billion in 2013, the accumulated loan impairment charges substantially exceed the losses realized to date. Hence, any further losses on loans already written down will not have a negative impact on the banks' capital, as long as they do not exceed the accumulated loan impairment charges.

DLR Kredit is a mortgage bank specialising in lending to agriculture. At end-2013, lending to farm properties constituted 64 per cent of DLR Kredit's total lending of kr. 134 billion. These loans are comprised of a guarantee agreement with the banks collaborating with DLR Kredit, typically smaller banks. The agreement reduces DLR Kredit's risk of loss by transferring part of the risk to the collaborating banks. For the other mortgage banks, lending to farm properties constitute a much smaller part of their total lending.

Due to the challenges in agriculture in connection with change of ownership, cf. below, it can be difficult to find buyers for less productive or distressed farms. This could mean that

the banks are unable to realise the collateral at the amount written down. In such cases the banks have to write down the collateral by a larger amount, thus further draining their capital. This provides an unfortunate incentive to support farms that are operationally unsound and it also supports the need to consider alternative financing models for agriculture. To ensure economically better utilisation of resources and strengthen agricultural earnings it is necessary that the banks realise their losses and close farms with an unsustainable operating economy.

NEW CAPITAL AS A CATALYST FOR CHANGES OF OWNERSHIP IN AGRICULTURE

There is a substantial need for changes of ownership in agriculture. According to the agricultural weekly Landbrugsavisen, farmers aged 65 or more currently outnumber those aged 35 or less by 7:1. Owner-farmers still dominate the industry, meaning that young farmers must provide large sums of capital to be able to acquire a farm. This impedes changes of ownership. While almost half of all traded farm properties of more than 100 hectares change hands within the family, the share for smaller properties is lower. Measures are required to improve the opportunities for either keeping existing capital or attracting new capital.

There is political focus on the financing situation of agriculture, resulting in the establishment of Landbrugets Finansieringsbank, LFB, a financing bank for agriculture. Moreover, some pension funds have become interested in investing in farms. All in all, however, the measures introduced so far can only be expected to make a small contribution to the financing of agriculture.

The fact that owner-farmers completely dominate agriculture is attributable to the previous legislation containing ownership restrictions. Phasing out or easing those restrictions could introduce new forms of ownership and contribute to attracting new investors to agriculture. The agreement on a growth plan for

food was adopted in the spring of 2014. The plan comprises the abolition of a great many of the ownership restrictions. One element is that it will no longer be a requirement for a particular person to have controlling influence in the company. In Eastern Europe, Danish farmers have successfully set up corporate farming entities, and it would be positive if new forms of ownership were to be introduced in Denmark, too. This would attract new investors and thus facilitate change of ownership.

Because of the way farms are financed today, the mortgage bank bears the risk of losses, while the owner reaps the potential gain. To raise new capital for the industry it may be necessary to look at models where losses and potential gains are distributed among owners and external investors.

While a number of measures are being taken to ensure that sufficient capital is available to farmers, the main sources of financing will still be banks and mortgage banks. It is therefore essential that future loans be granted on the basis of sound operational principles and to owners with sufficient capital rather than based on speculation about rising land prices.

