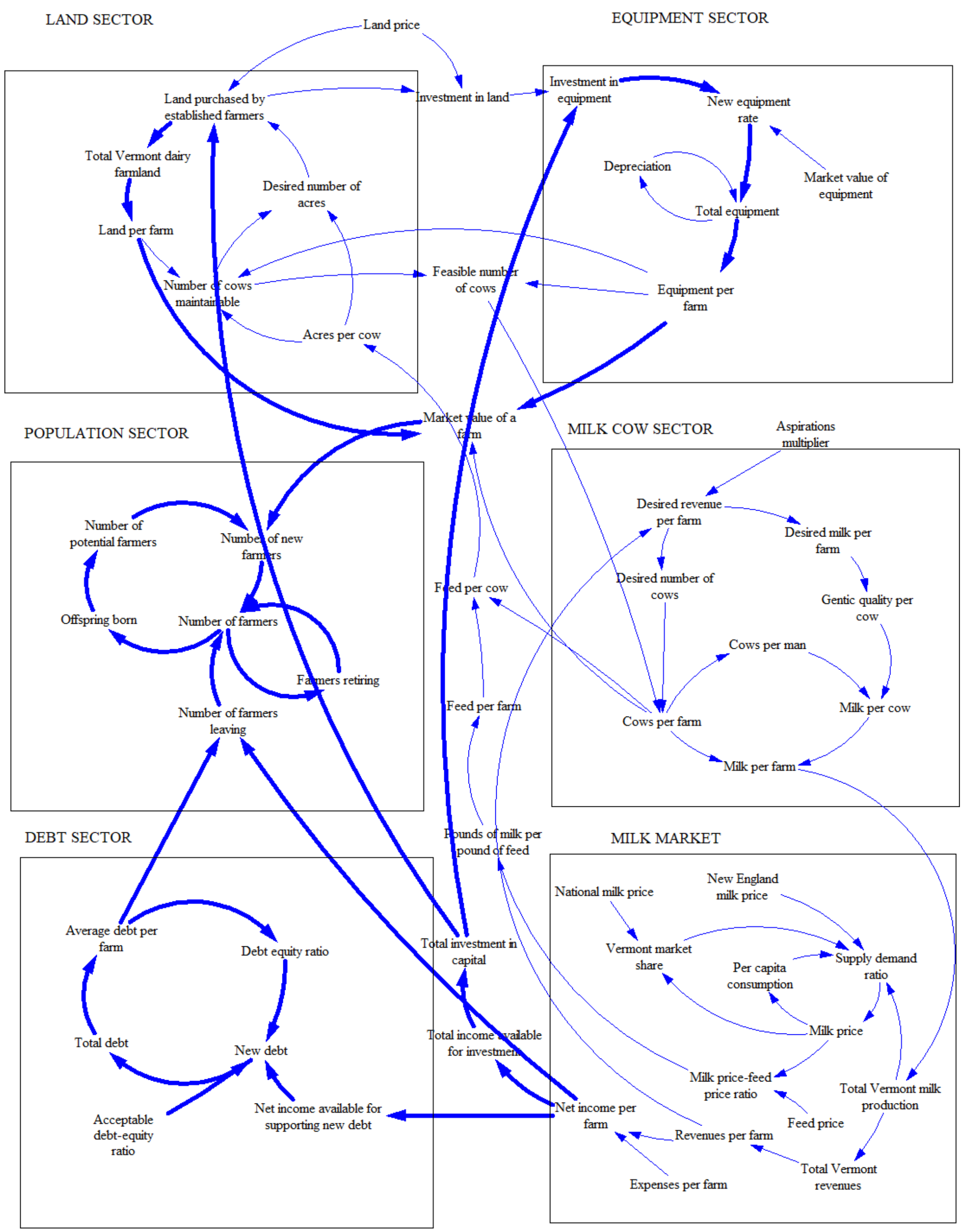
LAND SECTOR
Land price
EQUIPMENT SECTOR
Land purchased by established farmers
Investment in land
Investment in equipment
New equipment rate
Total Vermont dairy farmland
Desired number of acres
Depreciation
Market value of equipment
Land per farm
Total equipment
Number of cows maintainable
Feasible number of cows
Equipment per farm
Acres per cow
Market value of a farm
POPULATION SECTOR
MILK COW SECTOR
Aspirations multiplier
Desired revenue per farm
Number of potential farmers
Number of new farmers
Desired milk per farm
Desired number of cows
Feed per cow
Gentic quality per cow
Offspring born
Number of farmers
Cows per man
Farmers retiring
Feed per farm
Milk per cow
Number of farmers leaving
Cows per farm
Milk per farm
DEBT SECTOR
Pounds of milk per pound of feed
MILK MARKET
New England milk price
National milk price
Average debt per farm
Total investment in capital
Vermont market share
Debt equity ratio
Supply demand ratio
Per capita consumption
Total debt
Total income available for investment
Milk price
New debt
Milk price-feed price ratio
Total Vermont milk production
Acceptable debt-equity ratio
Net income available for supporting new debt
Net income per farm
Feed price
Revenues per farm
Total Vermont revenues
Expenses per farm

The model itself is 6 main sectors - illustrated and simplified here. The milk price influences the actions of farmers and regulates the supply of milk.If the market were perfectly competitive, the milk price would be determined solely by the supply of and demand for the product. All other things held constant, total income would increase if milk price rises. A higher total income would result in higher incomes for each farmer. Higher individual incomes would allow each farmer to invest more in capital and in cows to raise his production. As total production goes up, all else equal, the price will tend to fall. The overall effect of this negative feedback loop? Supply remains somewhat near to demand.

However, the farmer's viewpoint of the model is substantially different than the aggregate viewpoint. For the individual farmer, increases in milk production will increase his income, allow him to invest more, and thereby further augment his income with still higher production levels. To the farmer, no market constraints exist. As a consequence, individual farmers continuously strive to increase production. The result? A dramatic increase in milk production. (Keeping in mind that the author of this model published it in 1975!)

Another story from this model, shown in the bolded loops above: the average Vermont dairy farmer was participating in ELFAC, so the debt-equity ratio was about 25%. A new farmer, however, usually has a debt equity ratio closer to 75% of the total value of the farm. This results in a debt repayment which is approximately three times higher than that of the established farmer. Yet both are operating with the same rate of return. The problem of new farm debt repayment is compounded by the problem of down payments; new farmers have to place a down payment of up to 25% of the farm's value. To be competitive, new farmers must purchase large farms. Hence, the repayment requirements are demanding, and the down payment requirements are out of reach for most young people. This model predicted the end of Vermont farming within twenty years.