

Milk Retail Costs and Margins

**George Criner, Professor
Resource Economics and Policy
University of Maine**

**Academic Year 2003/2004
Faculté Invité, Université Laval
Email: Criner@maine.edu**

CRINER Nov 17, 2003

Milk Retailing Margins

- Retail margin is the sum of all costs incurred by the store from the time the milk is delivered to the store to when it leaves the store with the consumer, plus profit.
- Different levels of processor-dealer services impact store costs.

CRINER Nov 17, 2003

Current Cost/Margin Approaches

- **Allocation of grocery store costs with logical procedures.**
 - **Aplin and German 1986 Cornell study “Costs & Profitability of Fluid Milk in Retail Stores.”**
 - **Kirkland (Penn. State 1988) study “The Costs and Profitability of Selling Fluid Milk and Cream Products in Retail Grocery Stores in NE Penn.”**
 - **Criner (following Metzger & Anderson) ME.**
- **GAAP method.**
- **Profit inclusion depends on agency.**

CRINER Nov 17, 2003

Aplin and German

- **Direct costs include in-store milk handling labor, checkout, cooler and display cabinet, and cooling energy.**
- **Store-level indirect costs obtained from store.**
- **Above store-level indirect (Division and Corporate overhead) costs obtained from Cornell Food Industry Management Group data.**

CRINER Nov 17, 2003

Aplin and German – Indirect Costs

- **Included “indirect labor, building lease, insurance, property taxes, other utilities, supplies and the store or corporate overheads.”**

CRINER Nov 17, 2003

Aplin and German – Indirect Costs

- **Indirect labor allocated “on the basis of direct labor”**
- **Space costs allocated “on the basis of shelf linear feet”**
- **Supplies and overhead allocated “on the basis of sales revenue” (milk sales/all store sales)**

CRINER Nov 17, 2003

Aplin and German – Indirect Costs

- **NY margins based upon Aplin and German study (inflated and adjusted).**
- **3% of retail price included for profit.**

CRINER Nov 17, 2003

Kirkland Study

- **Same general approach as Aplin and German.**
- **Is updated and presented for comparison purposes in PA margin setting.**

CRINER Nov 17, 2003

GAAP Method Used in PA

- Milk revenue to store revenue ratio is multiplied by the total store expenses to arrive at those expenses attributable to milk. (divide by quarts => quart basis)
- This apportionment method is used in all other studies to varying degrees.

CRINER Nov 17, 2003

Cost and Margin Comparisons*

Cost Basis	PA (Aug 02)	NY (June 01)	Maine (02)
Per Quart	\$0.1022	\$0.2255	\$0.0929
Gallon	\$0.4088	\$0.4755	\$0.1967

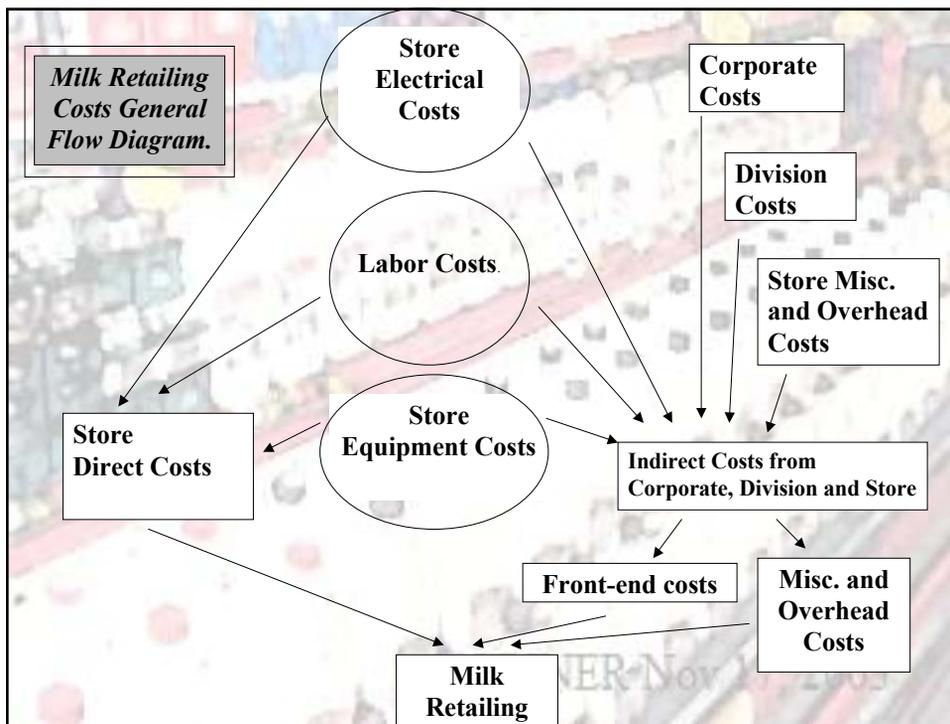
*PA and NY include profit, Maine does not.

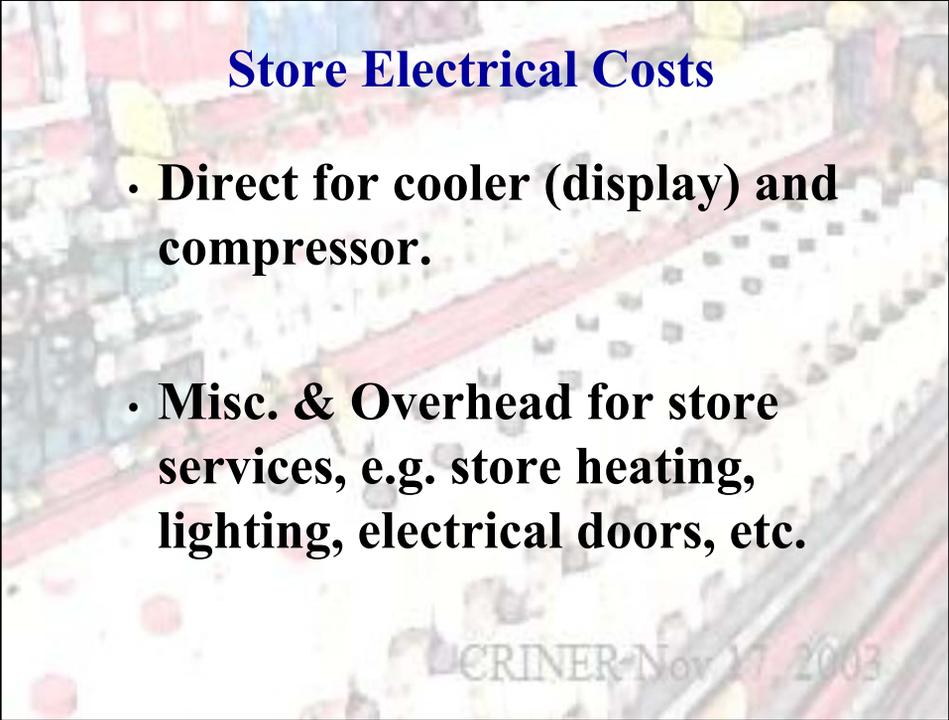
CRINER Nov 17, 2003

Maine Studies: Metzger, Metzger and Anderson, Criner and Anderson, Criner

- Same general approach as Aplin and German, and Kirkland in collecting and organizing costs.
- How margins are determined is big difference.
- Recent studies not published due to confidentiality.

CRINER Nov 17, 2003





Store Electrical Costs

- **Direct for cooler (display) and compressor.**
- **Misc. & Overhead for store services, e.g. store heating, lighting, electrical doors, etc.**

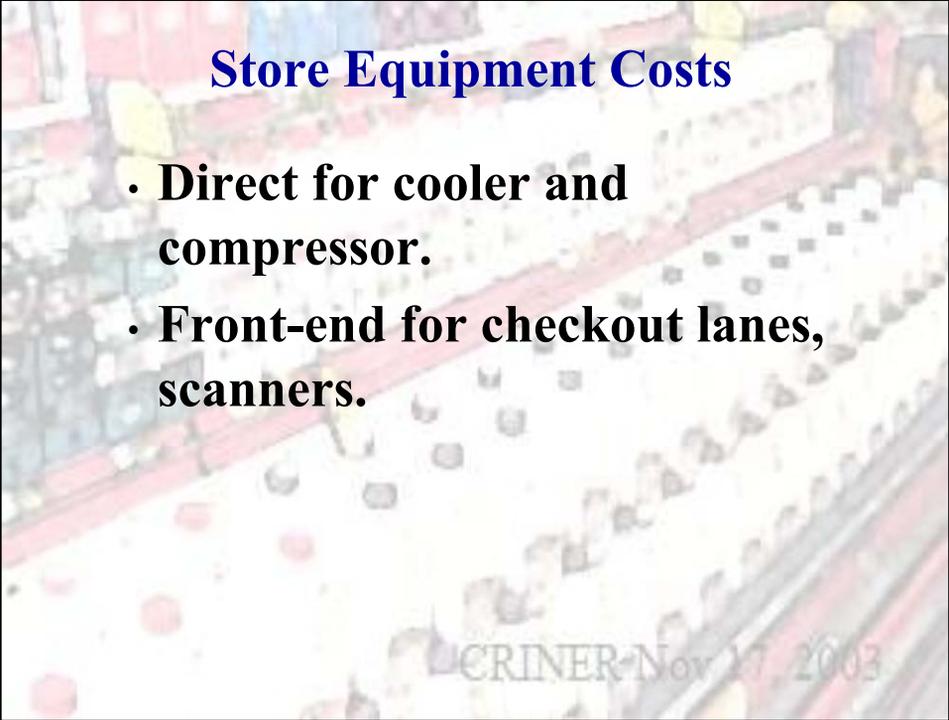
CRINER Nov 17, 2003



Labor Costs

- **Direct for cooler stocking, cleaning, ordering, receiving.**
- **Misc. & Overhead for front-end (cashiers and baggers, etc.) and general store management.**

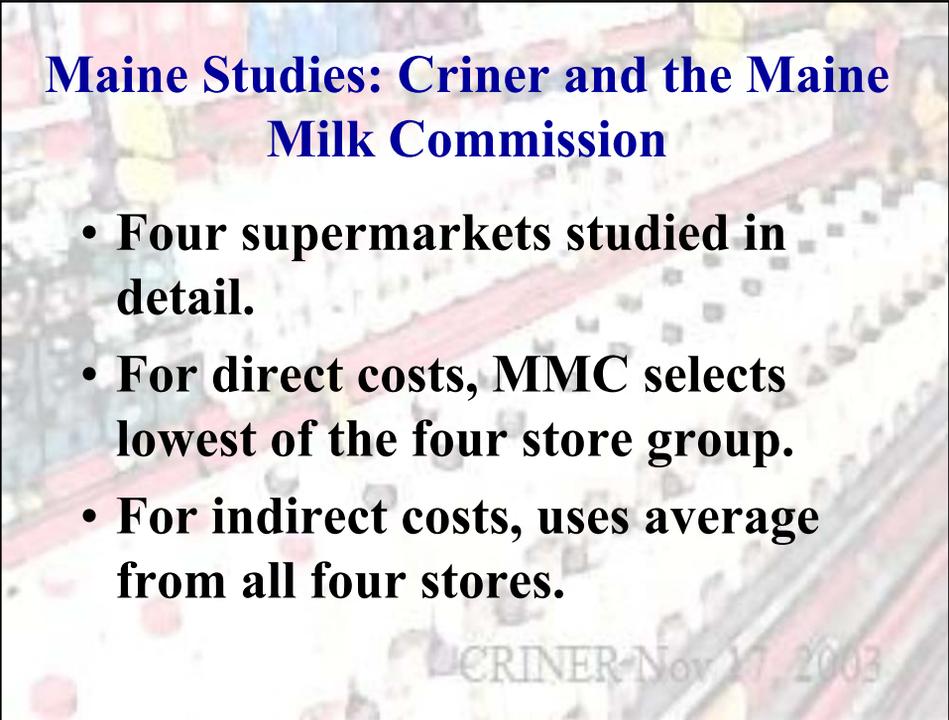
CRINER Nov 17, 2003



Store Equipment Costs

- **Direct for cooler and compressor.**
- **Front-end for checkout lanes, scanners.**

CRINER Nov 17, 2003



Maine Studies: Criner and the Maine Milk Commission

- **Four supermarkets studied in detail.**
- **For direct costs, MMC selects lowest of the four store group.**
- **For indirect costs, uses average from all four stores.**

CRINER Nov 17, 2003

Maine Studies: Criner and the Maine Milk Commission (MMC)

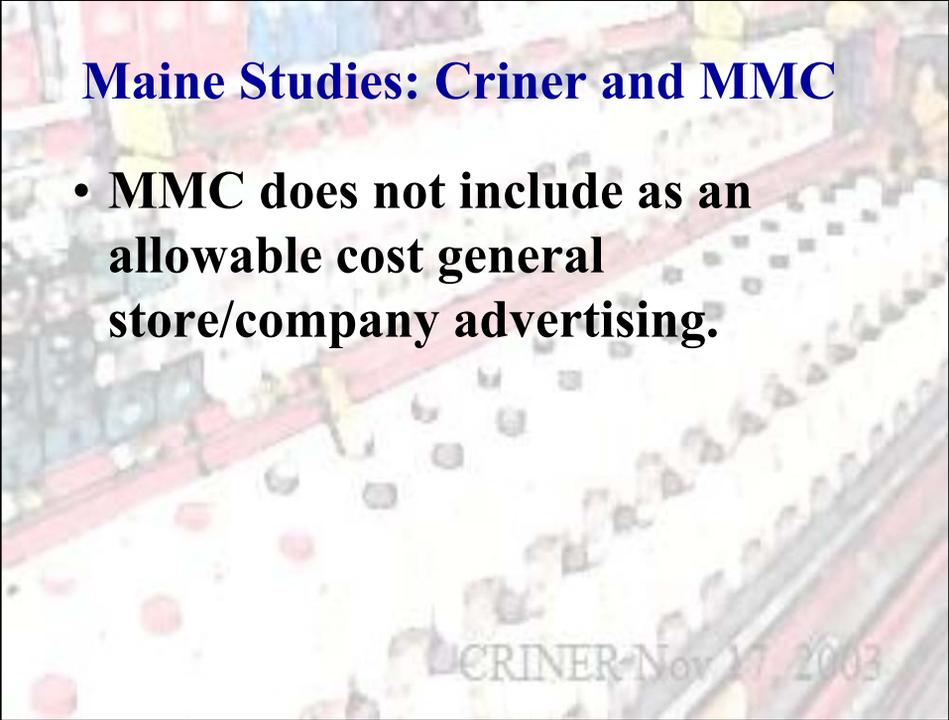
- **MMC by design sets its retail margin below “average cost of retailing.”**
- **By using the lowest store costs for direct costs, and average for indirect costs, result will be lower than a simple “average” of the four stores.**

CRINER Nov 17, 2003

Maine Studies: Criner and MMC

- **MMC does not include profit as part of the minimum margin.**
- **In NY model this appears to add about 8¢ on gallon container (3% of retail price).**
- **PA uses a 2.5% profit in its margin calculations (has allowable range of 2.5% to 3.5%).**

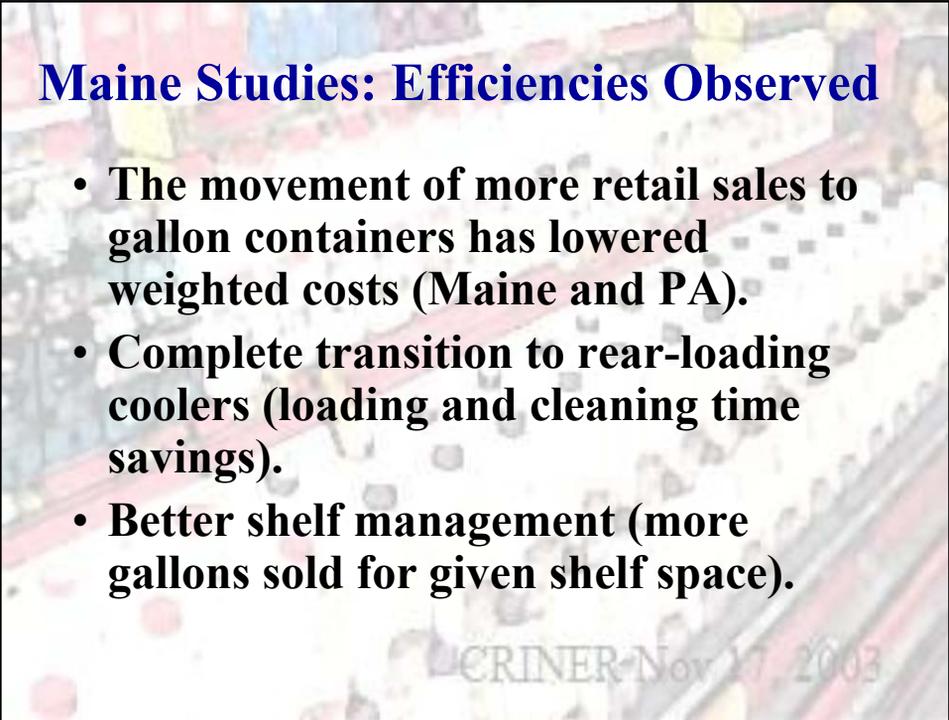
CRINER Nov 17, 2003



Maine Studies: Criner and MMC

- **MMC does not include as an allowable cost general store/company advertising.**

CRINER Nov 17, 2003

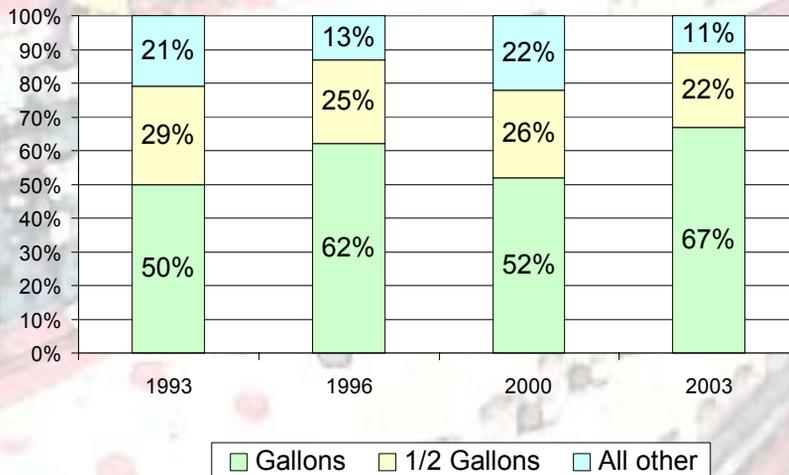


Maine Studies: Efficiencies Observed

- **The movement of more retail sales to gallon containers has lowered weighted costs (Maine and PA).**
- **Complete transition to rear-loading coolers (loading and cleaning time savings).**
- **Better shelf management (more gallons sold for given shelf space).**

CRINER Nov 17, 2003

Movement Towards Gallons



CRINER Nov 17, 2003

Do Costs Vary by Store?

- Yes, but variation less at direct cost level than total cost level due to overhead factors.
- Large costs variation can be found in overhead costs, for example, depending on cost calculation method (book value for building versus replacement value).
- Aplin and German found “The direct costs of handling gallons of milk in chains in most markets were not significantly different from each other.”

CRINER Nov 17, 2003

Margin Comparisons*: 1993 Maine AVE values inflated to 2003

Cost Basis	PA (Aug 02)	NY (June 01)	Maine (03 est.)
Per Quart	\$0.1022	\$0.2255	\$0.1524 \$0.1290
Gallon	\$0.4088	\$0.4755	\$0.3782 \$0.4043

*PA, NY and Maine all include profit value.

Conclusions

- Data suggests that the retail margin in the Northeast for gallon containers is in the 40 to 50 cent range, and 10 to 23 cent range for quarts.