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2006 International Livestock Congress – Calgary

Beef 2006: Strategic Thinking for a Changing Industry

The Effect of Changes in the Exchange Rate On the Canadian Beef Industry

Presented by: Dennis McGivern

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Background

Project Commissioned by:

National Beef Industry Development Fund

Project Completed by:

Kurt Klein, University of Lethbridge

Kevin Grier, George Morris Center

Dennis McGivern, Informa Economics, Inc.

Purpose:

- Examine the implications of an appreciating Canadian dollar on the Canadian beef industry at the primary production and processing levels
- Provide industry with a quantitative analysis that determines the effects (short term and long term) of changes in the exchange rate
- Demonstrate how changes in the exchange rate affect prices, trade, and overall industry structure

Objectives:

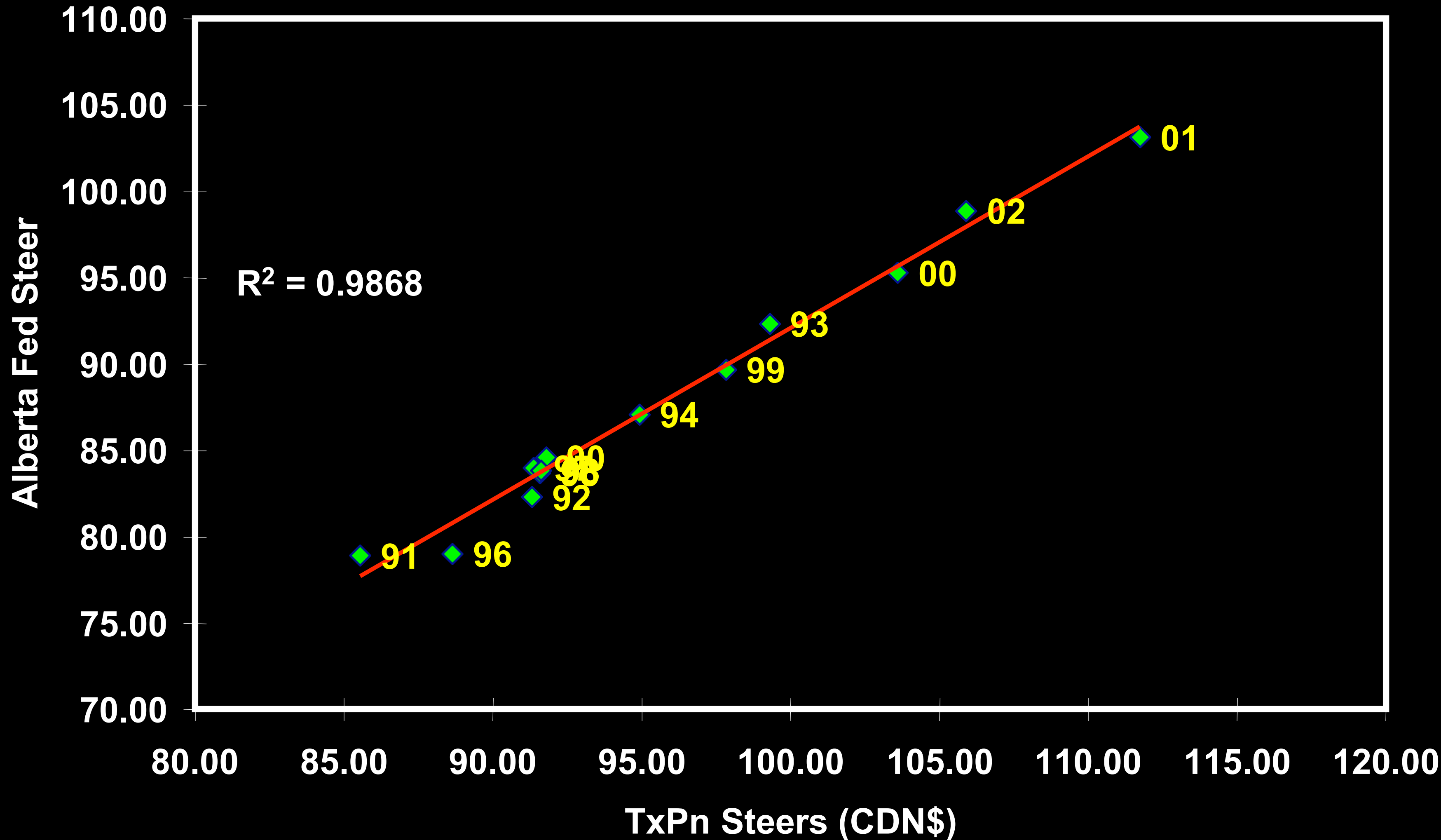
Measuring and examining the impact of the exchange rate on the following areas of the cattle and beef packing sectors:

1. Revenues and prices
2. Commodity input costs (particularly grain)
3. Industry production factors such as labour, energy, interest rates, equipment, land and materials
4. Investment and capital expenditures
5. Asset valuations
6. Trade patterns
7. Production
8. Costs of production, margins and profitability
9. Industry structure (size and number of operations)

Exchange Rate Impacts on Commodity Prices and Input Factors

- To a large degree, Canadian prices (feeder cattle through beef cuts) are determined by US prices due to the ability to arbitrage in an open North American market
- The exchange rate plays a direct role in commodity pricing in Canada
- There is a direct, highly correlated inverse relationship between the exchange rate and cattle/beef prices
- The exchange rate plays a direct and simple arithmetic role in pricing cattle and beef
- Very little relationship between the exchange rate and most agricultural inputs (other than grain in livestock rations)

Alberta & US Fed Steer Prices



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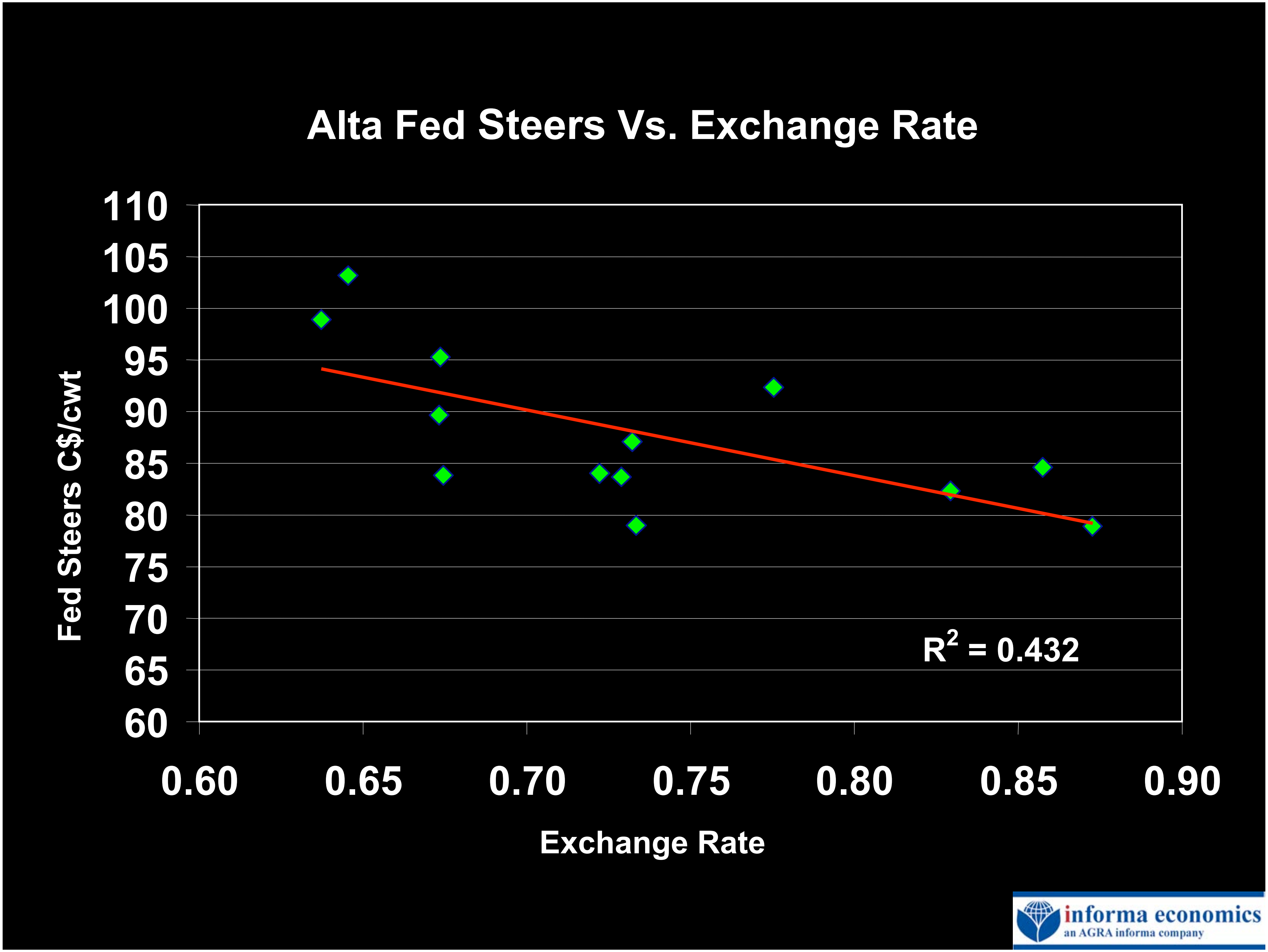

Alta Fed Steers Vs. Exchange Rate
Fed Steers C$/cwt
110
105
100
95
90
85
80
75
70
65
60
0.60
0.65
0.70
0.75
0.80
0.85
0.90
Exchange Rate
R^2 = 0.432
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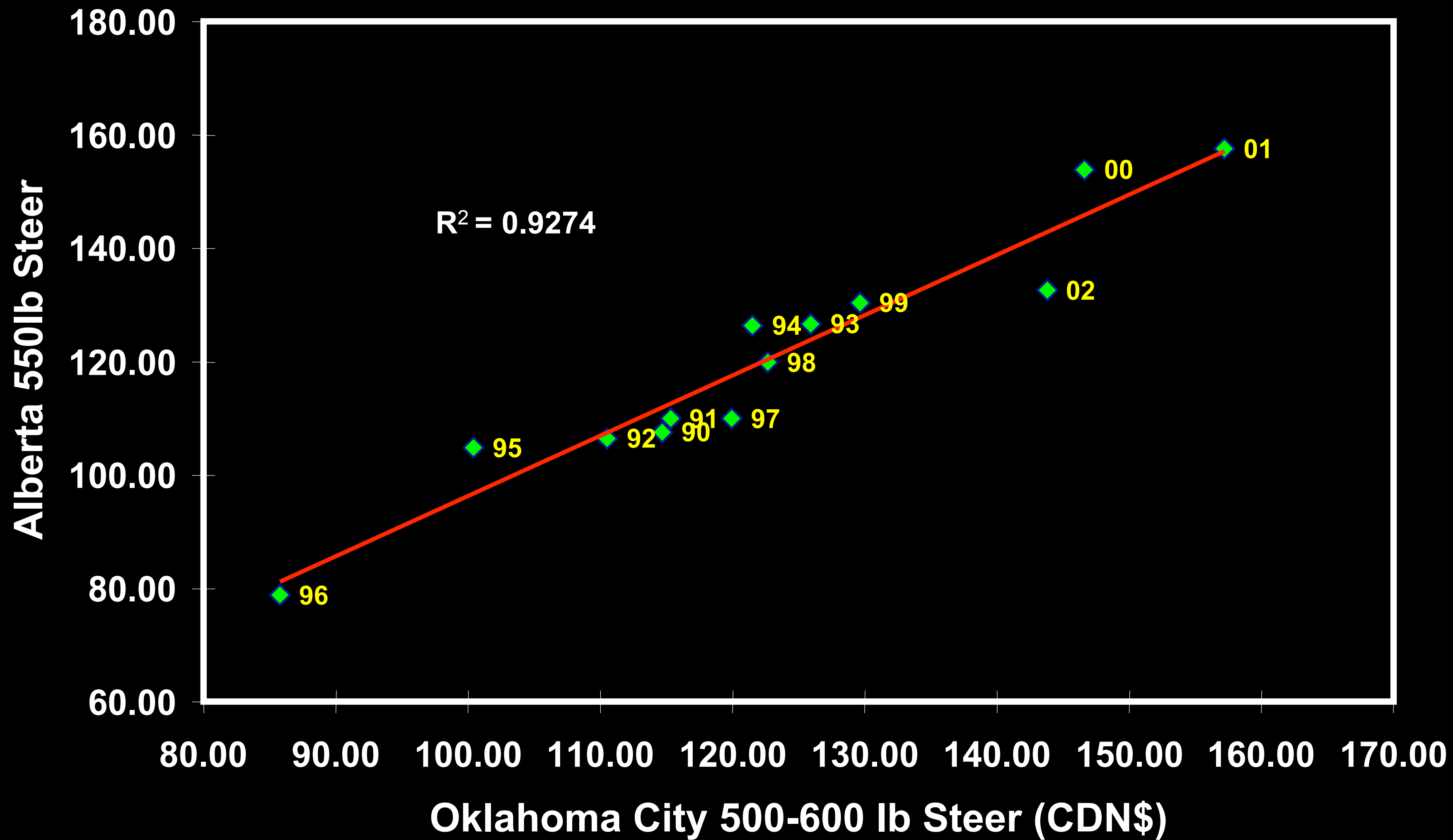
Alberta & US Steer Calf Prices



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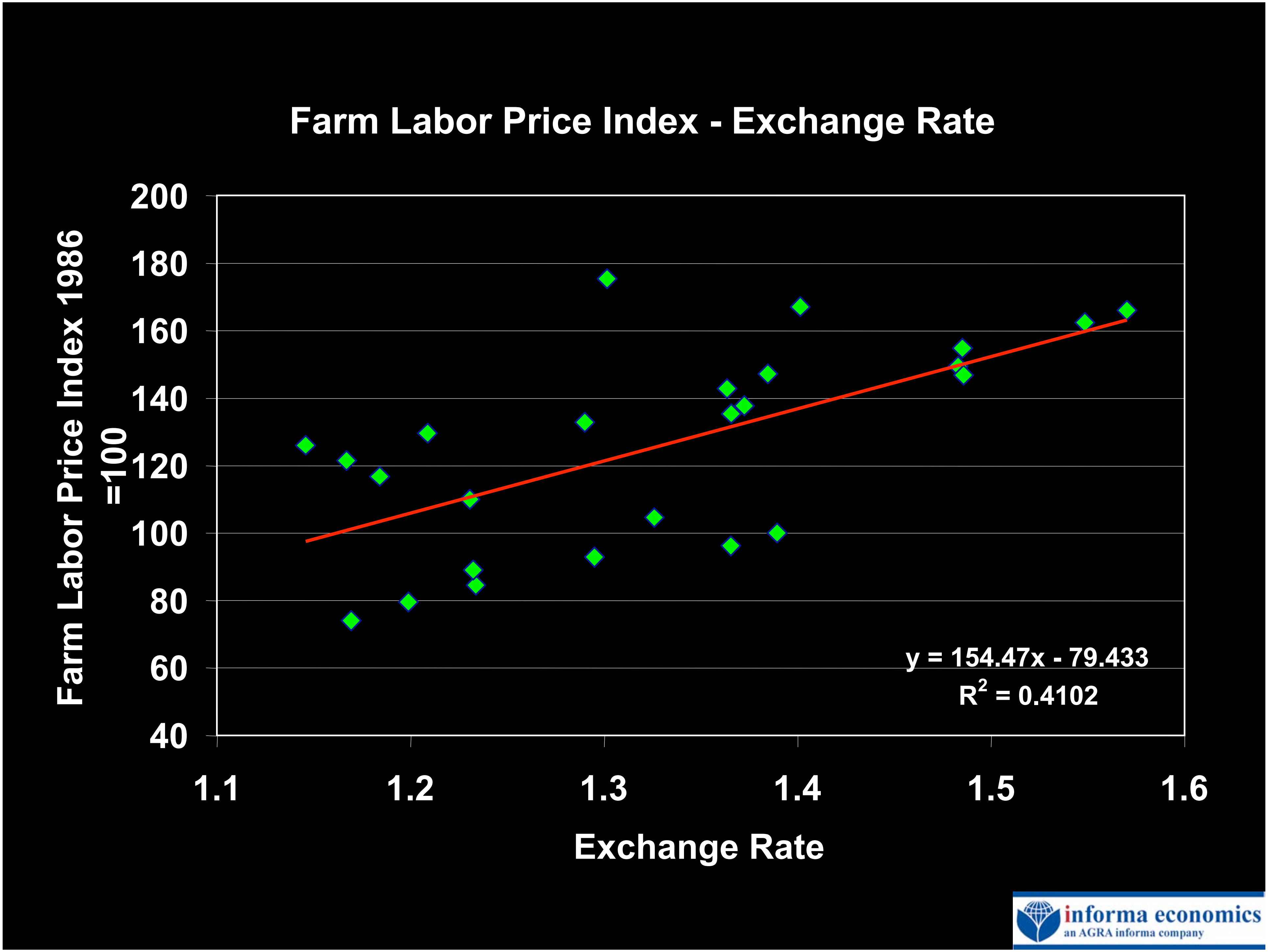
Exchange Rate Impacts on Commodity Prices and Input Factors

- Very little impact on the prices or values of land and farm labour
- Small impact on prices of fertilizer, electricity and diesel
- Relatively stronger relationship between the exchange rate and the prices of capital assets
- Thus, the exchange rate plays a minor role in the price determination or discovery process of cattle industry inputs (with the exception of grain and prices of capital assets)


Farm Labor Price Index - Exchange Rate
Farm Labor Price Index 1986 =100
200
180
160
140
120
100
80
60
40
1.1
1.2
1.3
1.4
1.5
1.6
Exchange Rate
y = 154.47x - 79.433
R^2 = 0.4102
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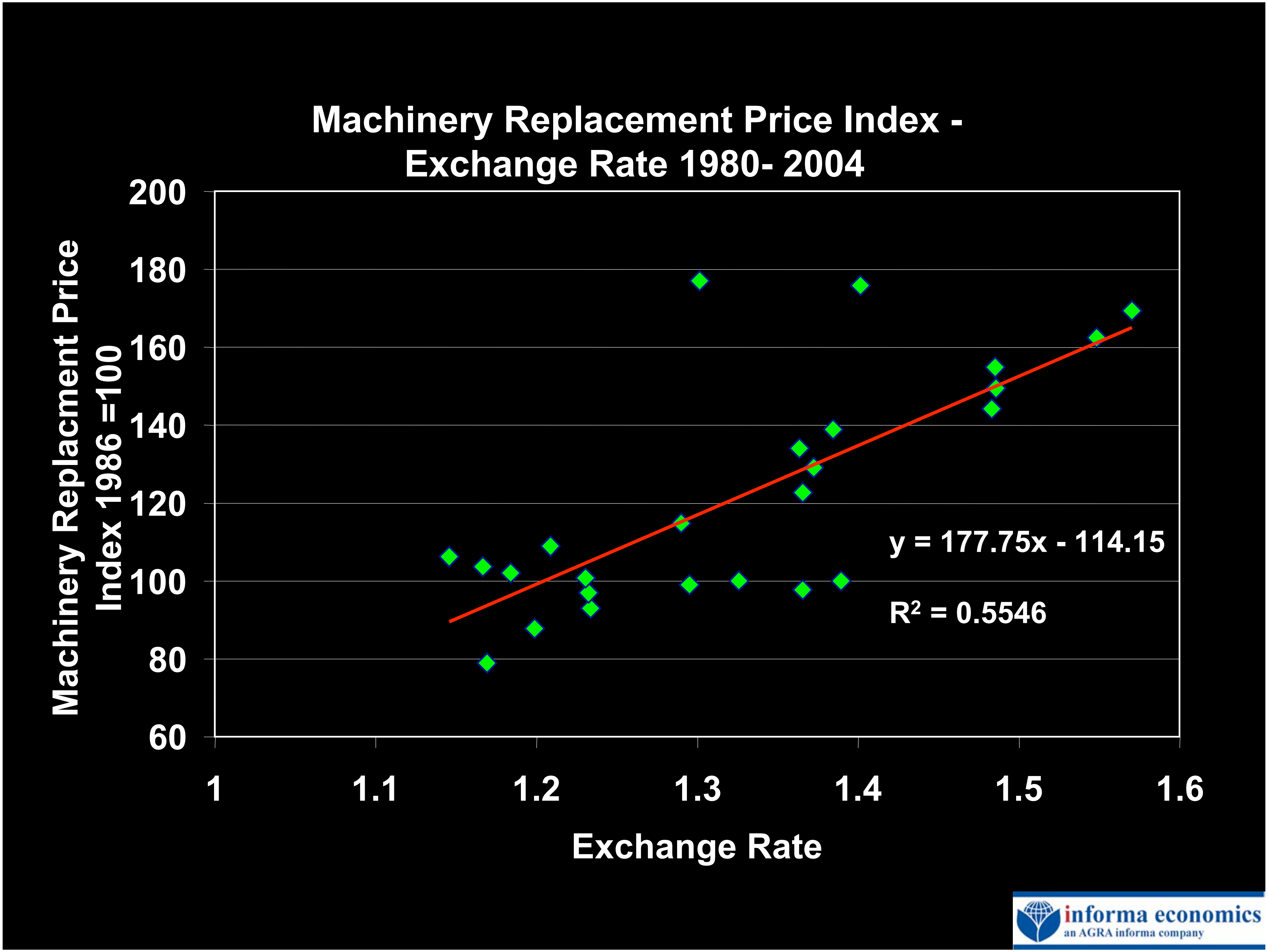
Machinery Replacement Price Index -
Exchange Rate 1980- 2004
Machinery Replacment Price
Index 1986 =100
200
180
160
140
120
100
80
60
1
1.1
1.2
1.3
1.4
1.5
1.6
Exchange Rate
y = 177.75x - 114.15
R2 = 0.5546
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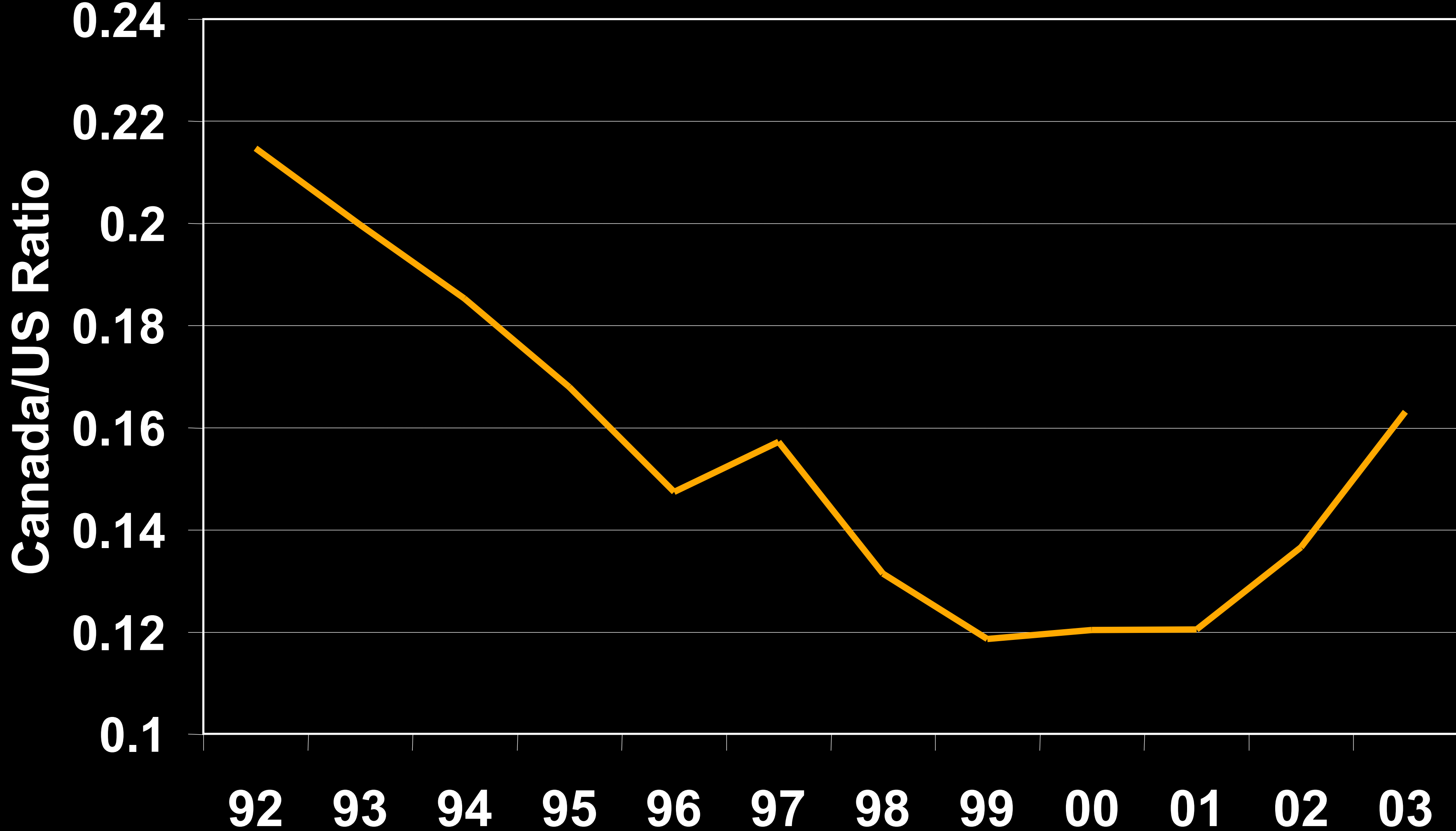
Exchange Rate Impacts and Industry Productivity and Competitiveness

- Declining productivity in the overall Canadian economy was primary cause of the depreciation of the currency relative to the US dollar during the 1990s
- Declining productivity may have resulted from declining investment relative to the US
- Currency depreciation was largely result of the lack of competitiveness of Canadian industries in aggregate in comparison to the US and other nations
- Additional factors (political and other) were also at play, but the strong correlation with lack of competitiveness indicates a driving force

Total Capital Expenditures Canada/US



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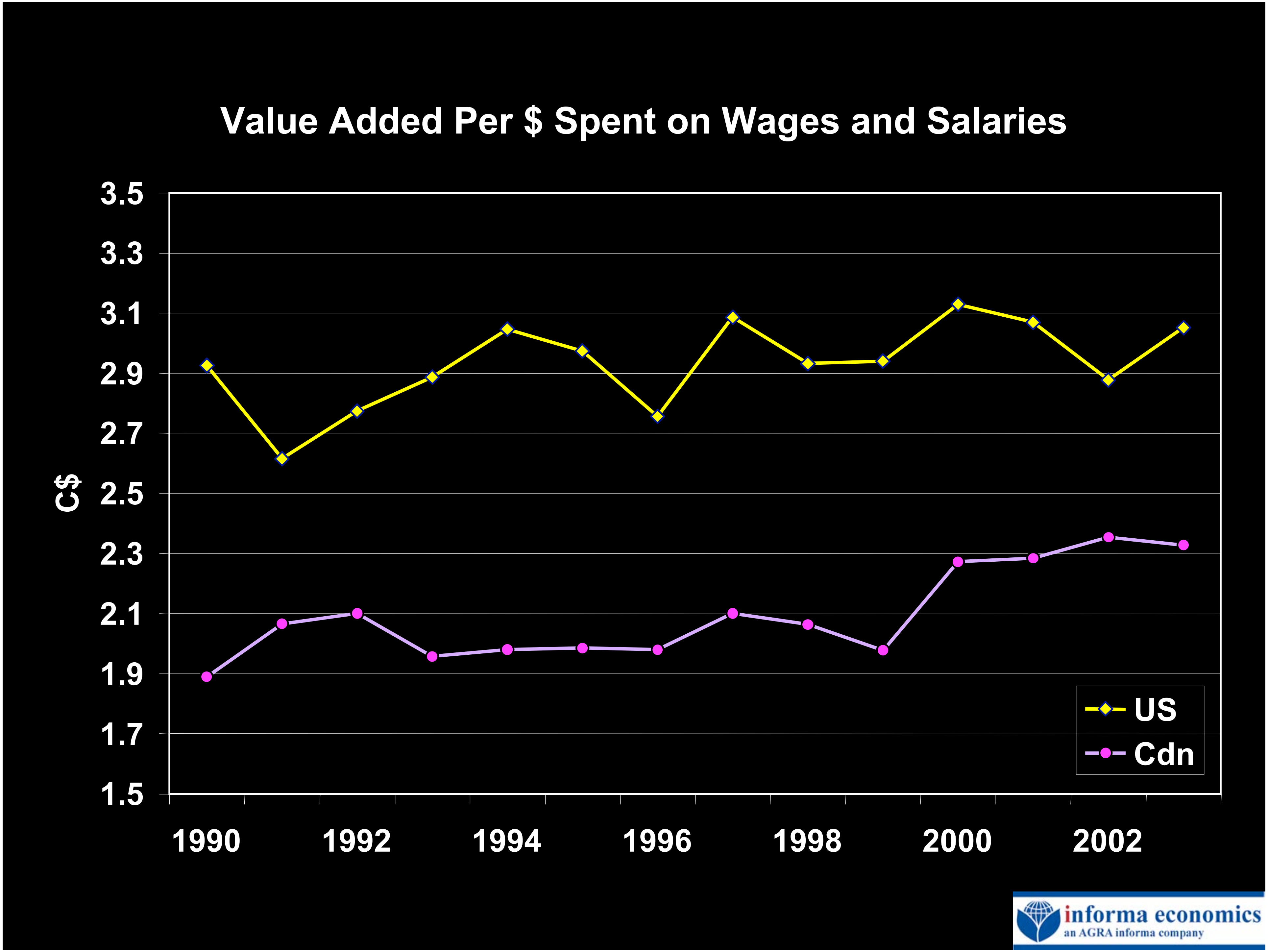

Value Added Per $ Spent on Wages and Salaries
3.5
3.3
3.1
2.9
2.7
2.5
2.3
2.1
1.9
1.7
1.5
C$
1990
1992
1994
1996
1998
2000
2002
US
Cdn
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Exchange Rate Impacts and Industry Productivity and Competitiveness

- Notable appreciation of Canadian dollar since early 2003, but not yet sufficient evidence that there has been corresponding increase in productivity
- Gradual increase in investment during 2002/03, widening interest rate spreads and surging oil revenues are likely the key drivers of the appreciation
- Misleading to state that a declining currency helps Canada's competitiveness
- A depreciating currency is a measure of Canada's lack of competitiveness

Cost and Revenue Structures in Each Component of the Value Chain

- Assessed consequence of appreciating Canadian dollar on thirteen typical cattle enterprises across Canada
- Partial budget analysis revealed an adverse impact, sometimes quite severe, for every cattle enterprise in every region
- Both the cow-calf and feedlot operations incur significant short-term losses, the greatest negative impact is endured by the cow-calf operations
- Long-run, the full burden of exchange rate appreciation expected to be fully borne by cow-calf operators
- Loss in value will be incorporated into the value of fixed assets, namely land

Change in Gross Margins of Cow-Calf and Feedlot Enterprises from 28.5% Increase in CDN$/US$ Exchange Rate, $/head

	Cow-Calf Enterprise		Feedlot Enterprise	
	Small	Large	Small	Large
Alberta	-210	-228	-76	-93
Saskatchewan	-207	-229	-75	-113
Manitoba	-202	-225	-111	-137
Ontario	-180	-194	-143	-178
Commercial (AB)				-118

Based on 2001 prices and costs
Calculations do not include fixed costs or the returns to labour

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Cost and Revenue Structures in Each Component of the Value Chain

- In the long-run, feedlot operations would be expected to return to acceptable margins by paying less for feeder cattle
- During 1990s, Canadian packers were very low cost relative to the US, largely due to the cheap dollar
- As of 2006, this low cost, dollar-shield advantage has largely eroded
- Appreciating dollar forces packers to more closely align operating costs, particularly labour with the US
- The simple arithmetic of the appreciation has caused the spread between beef revenue and cattle costs to narrow
- Dollar appreciation is causing and will force Canadian packers to improve their competitive position, or risk failure in the market

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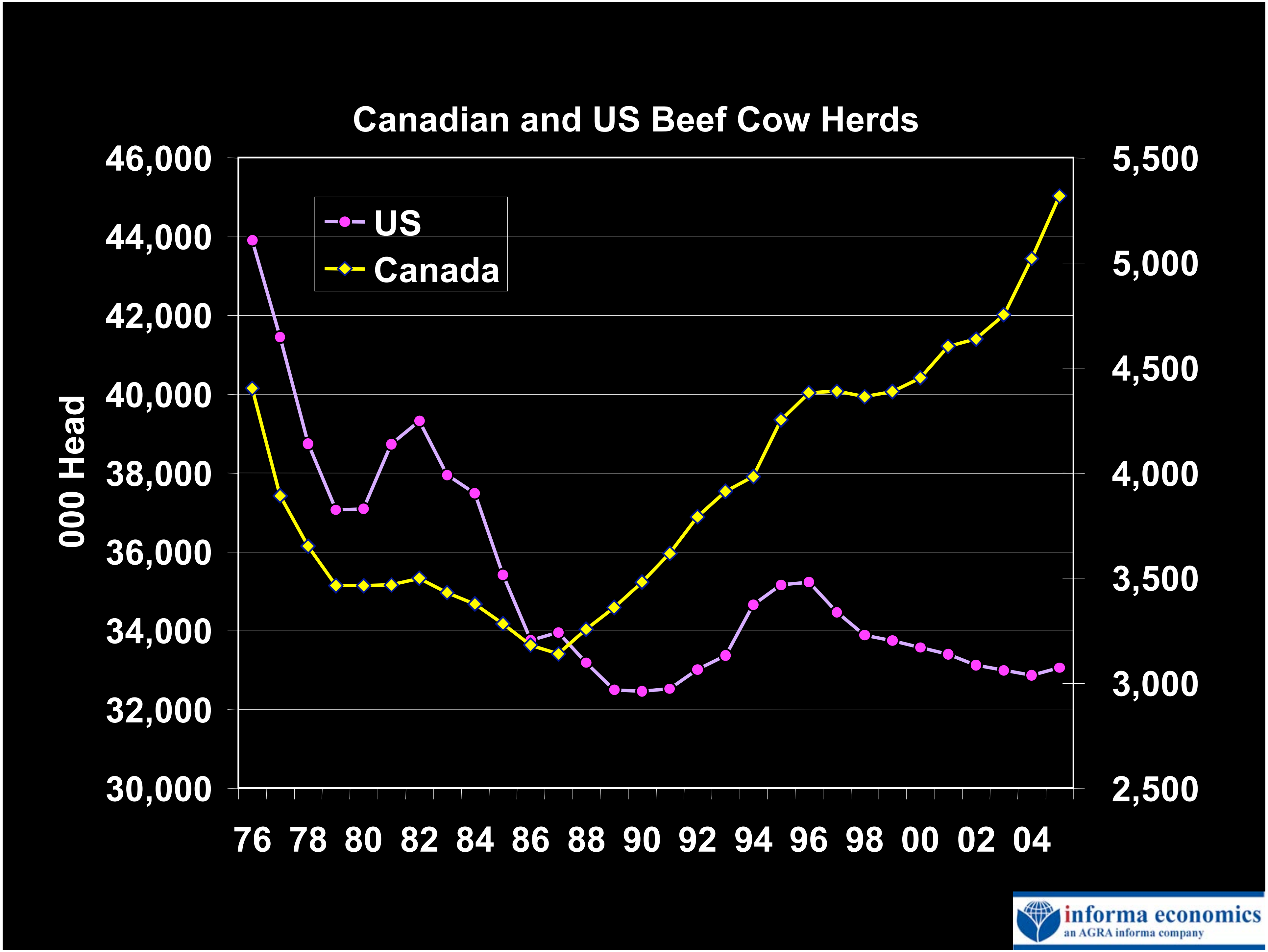
Projected Impact of Exchange Rate Appreciation on Packer Labor Costs ($/hd) (based on estimated pre-BSE costs)

	C$1.548=US$1	C$1.204=US$1
Canadian dollar terms	C$125	C$125
US dollar terms	US$81	US$104

Canadian Cattle and Beef Industry Production and Structural Trends

- Currency depreciation during the 1990s influenced a disproportionate growth in the cowherd
- But, did not result in a disproportionate growth in beef production in Canada
- Still, Canadian beef production did increase faster than US production during the 1990s
- Indirect relationship, in that the expanded cowherd made conditions conducive to expanded beef production in Canada
- Spurt in growth of Canadian packing plant capacity, now close to productive capabilities of the cowherd (probably due to packer margins from mid 2003 through 2005)



Canadian and US Beef Cow Herds
46,000
44,000
42,000
40,000
38,000
36,000
34,000
32,000
30,000
000 Head
5,500
5,000
4,500
4,000
3,500
3,000
2,500
US
Canada
76
78
80
82
84
86
88
90
92
94
96
98
00
02
04
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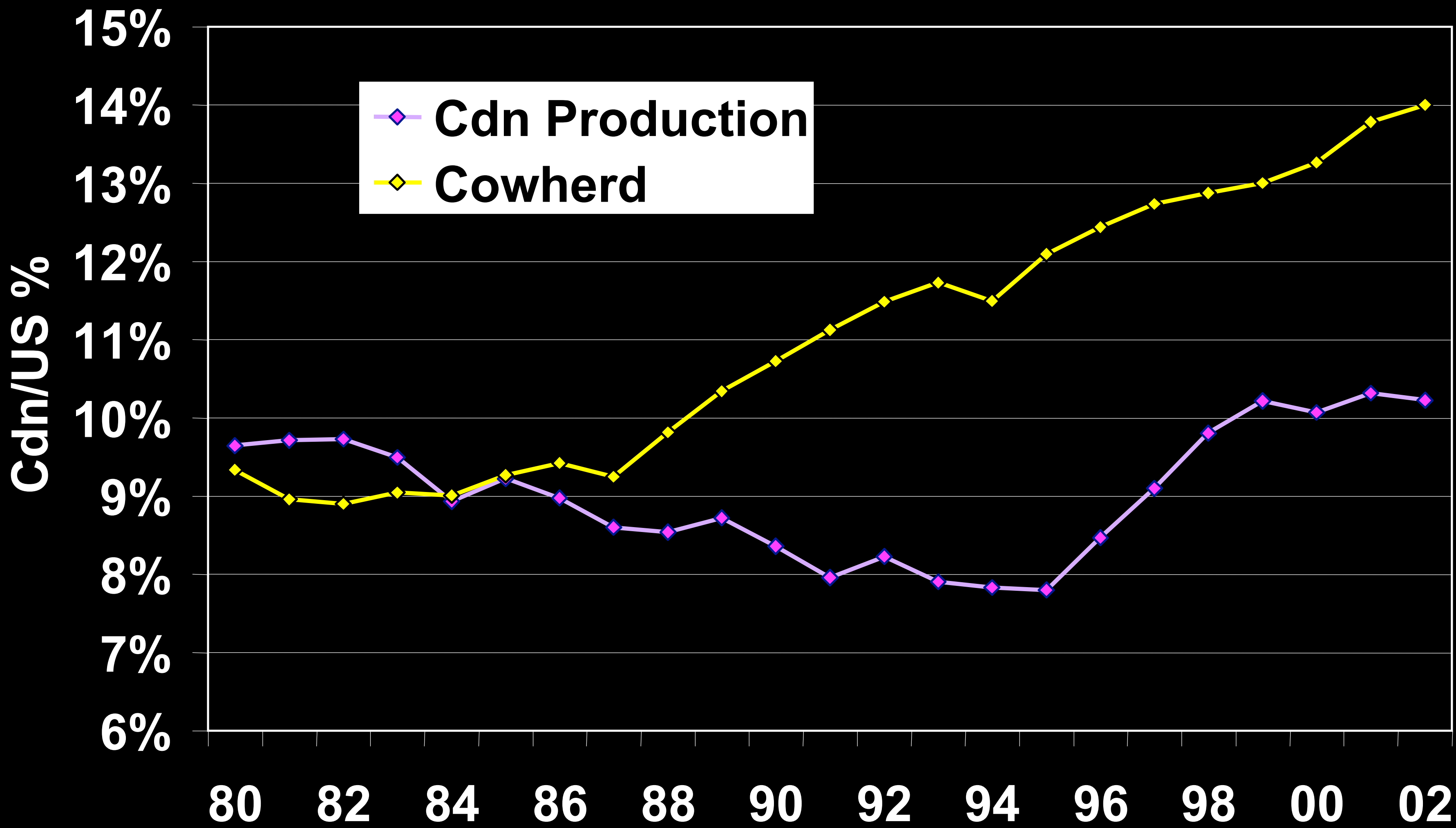
Cdn vs US Production and Cowherd



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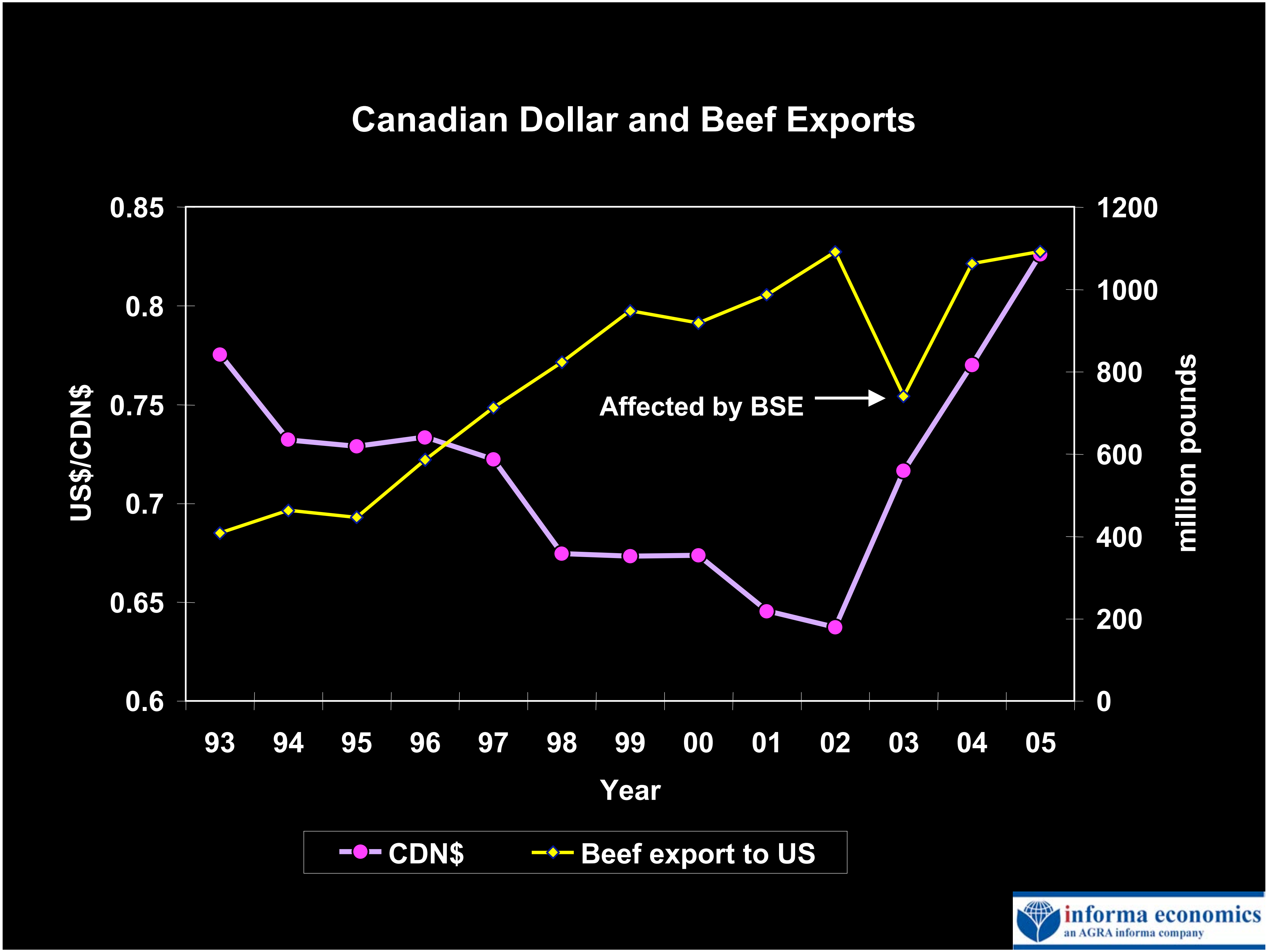
Impact of Exchange Rate on Canadian Cattle and Beef Industry Trade Trends

- Long term annual and shorter-term monthly data assessed for relationship between live and product trade and the exchange rate (1971-2002)
- No confident statistical relationship between exchange rate and cattle imports or cattle exports
- Reasonable relationship between annual beef imports and the exchange rate, but no monthly relationship (annual relationship may be coincidental)
- More significant statistical relationship between beef exports and the exchange rate, both on annual and monthly basis
- As the exchange rate depreciated, exports tended to increase



Canadian Dollar and Beef Exports
0.85
0.8
0.75
0.7
0.65
0.6
US$/CDN$
1200
1000
800
600
400
200
0
million pounds
Affected by BSE
93
94
95
96
97
98
99
00
01
02
03
04
05
Year
CDN$
Beef export to US
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Impact of Exchange Rate on Canadian Cattle and Beef Industry Trade Trends

- Weak relationship on cattle trade or beef import raises question about causal relationship with exports
- 1971-2002, Canadian dollar trending mostly downward
- 30 percent appreciation of Canadian dollar from 2002-2005
- Yet beef exports very strong in 2004-05 (record in 2005)
- Consider volume of live cattle exports since the border re-opened, despite the appreciated dollar
- Record hog exports in 2004 and near record numbers in 2005

Impact of Exchange Rate on Canadian Cattle and Beef Industry Trade Trends

- "Conventional wisdom" would argue that a depreciating currency results in greater exports and an appreciating currency would result in less exports
- For commodity markets, changing exchange rates become directly reflected in prices in the domestic market
- The depreciated (appreciated) dollar may result in higher (lower) Canadian cattle and beef prices
- But a depreciated (appreciated) dollar does not necessarily mean that more (less) product will trade with the US

Concluding Remarks

- Declining relative productivity in the overall economy was a primary cause of the currency depreciation during the 1990s
- The depreciating currency was a measure of Canada's lack of competitiveness
- Exchange rates appear to have very little impact on the prices or values of land and farm labour and a small impact on the prices of fertilizer, electricity and diesel
- Grain costs and the prices of capital assets have stronger relationships with the exchange rate
- With open borders and ability for market arbitrage, Canadian cattle and beef prices react to changes in US cattle/beef prices and changes in exchange rate

Concluding Remarks

- Margins in all sectors can be negatively impacted by an appreciating dollar
- Long-term burden will be ultimately borne by the cow-calf sector
- Feedlot sector will return to acceptable margins in the long-run by bidding less for feeder cattle
- Appreciating currency will force Canadian packers to improve their competitive position, or risk failure in the market
- Contrary to “conventional wisdom”, a depreciating (appreciating) dollar does not necessarily mean that more (less) product will trade to the US

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