

Comparing Dairy Proposals in the 2012 Farm Bill: Supply Management & Other Initiatives

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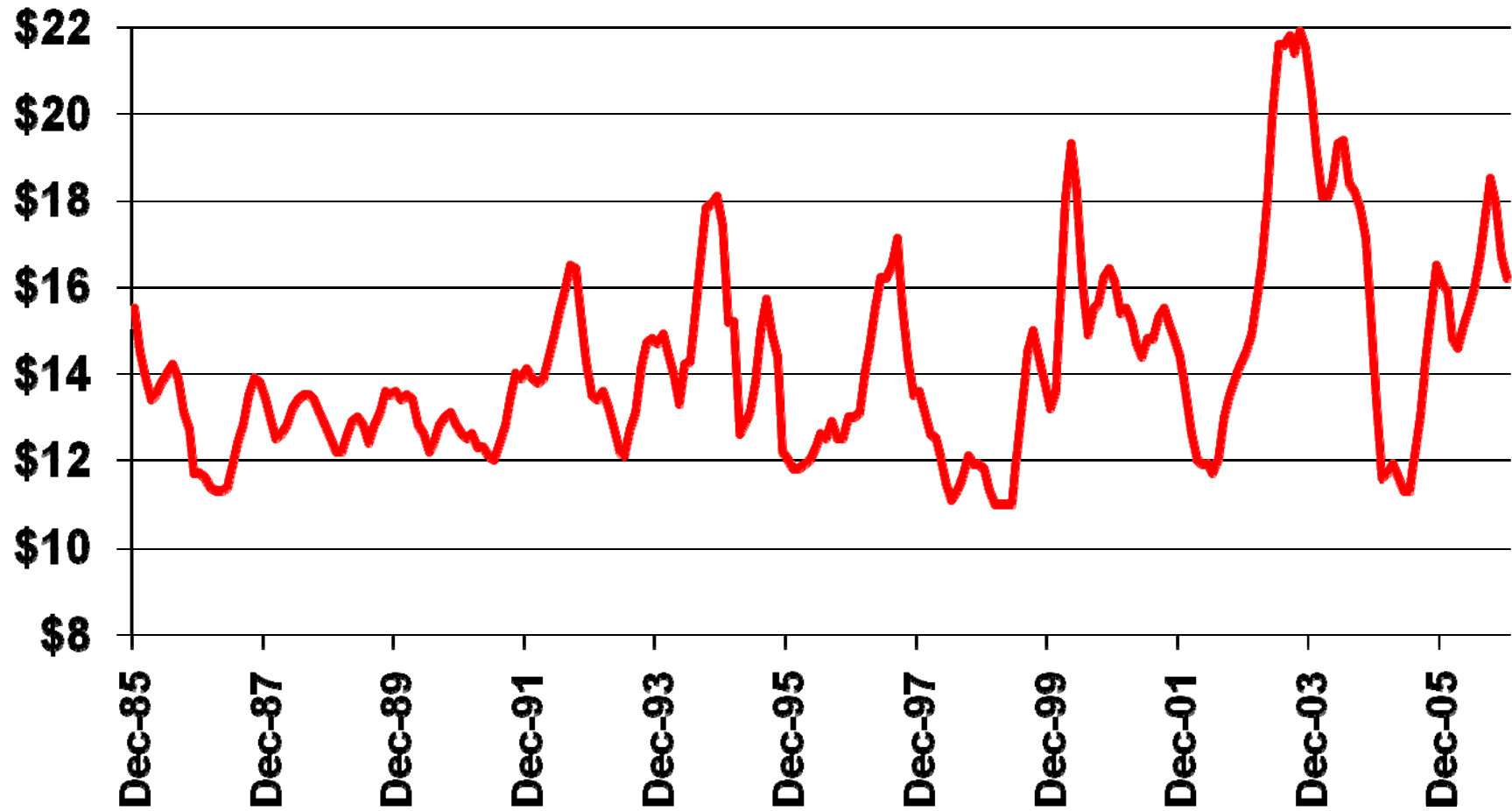
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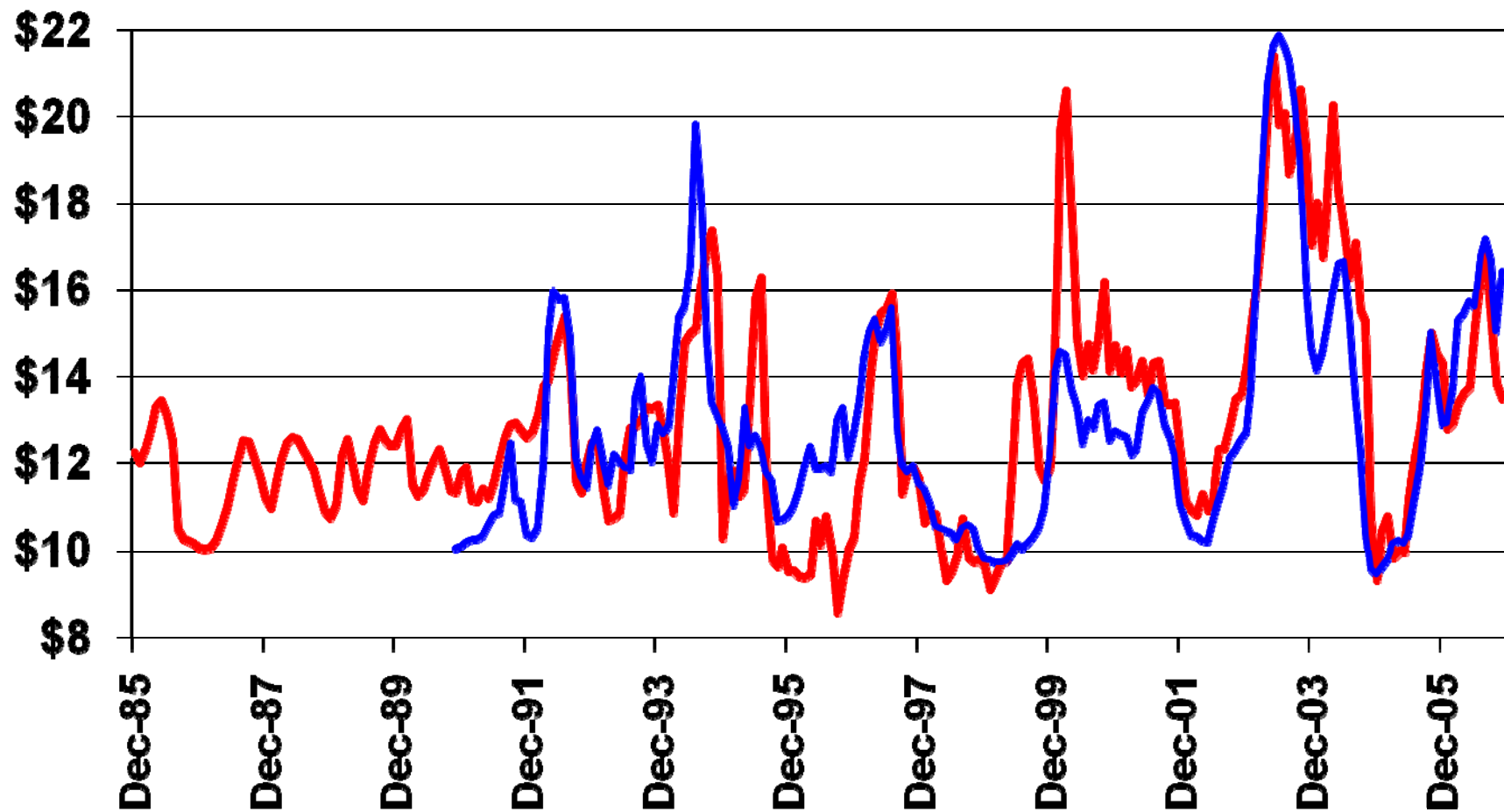
Outline

- Focus on price volatility and policy options
- What causes price variation?
- Analysis of programs to reduce variation
 - FFTF (DMSP and DPIPP)
 - Margin insurance (only)
 - Farm Savings Accounts

All-Milk Price 1990-2011



Class III and IV Prices 1990-2011

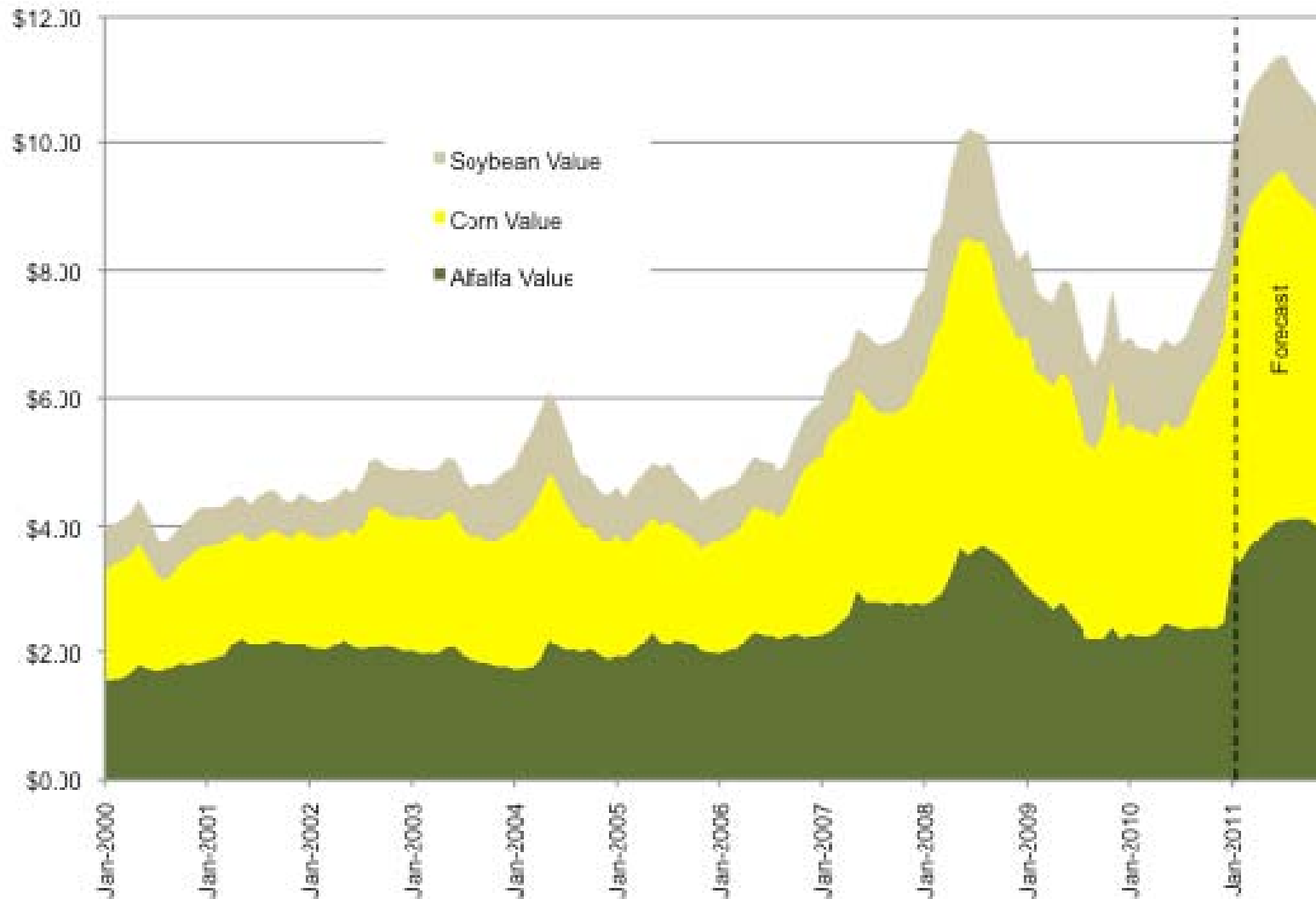


Why this Volatility?

Three main reasons proposed:

- Random shocks
- Government policy
- Price cycles due to supply chain behaviors

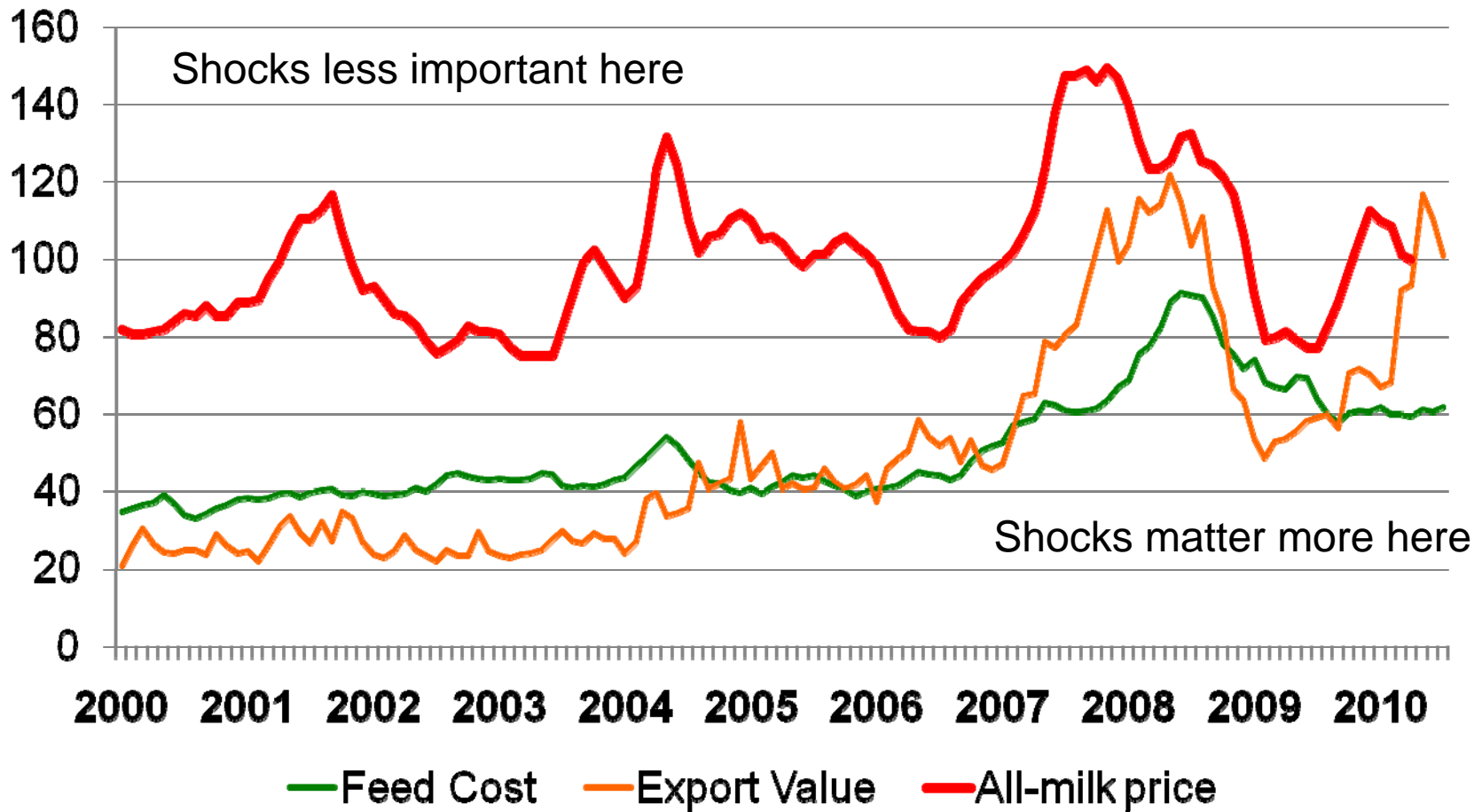
Feed Costs: A Supply Shock



Exports: A Demand Shock



Index of Feed, Exports All-milk



Shocks

- Contribute to volatility but don't appear to be the only cause
- Clearly in 2007-2010, but not as clearly before

Government Policy

- Federal (or State) Milk Marketing Orders cause volatility
 - Milk doesn't move to "highest and best use"
 - Delays in reporting and price formulas
- May contribute some, but evidence is limited
 - Doesn't seem to explain longer-term cycles in prices and profitability
 - Many commodities have volatility without MOs or other price regulation

Supply Chain Behaviors

- Many commodities have price and production cycles
 - Milk
 - Cattle
 - Aircraft
 - Electricity Generation

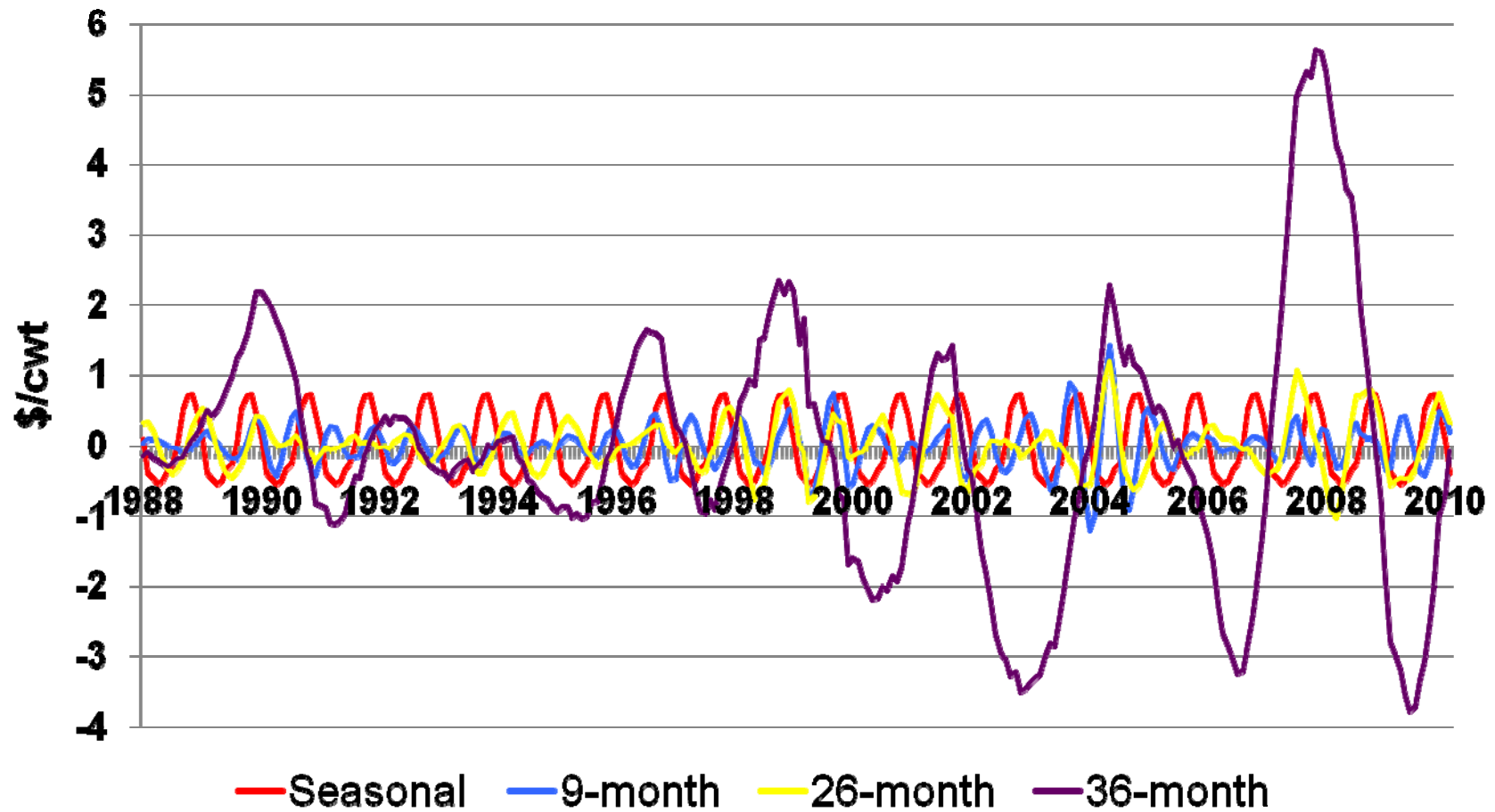
Why Price Cycles?

- One reason: more farms expand when times are good
 - This is logical for the individual farm if a good long-term investment...
- But this often leads to times that are not so good
- The issue is that the supply decisions are not coordinated
 - So the market “overshoots” and “corrects”
- This is very common in supply chains

Dairy Price Cycles

- In previous work, we identified a number of price cycles:
- Seasonal (still with us)
- 9-month
- 26-month
- 36-month (largest cycle)

All-Milk Price Cycles



Main Approaches to Reduce Volatility...

- Probably need to do two things:
- Make the dairy supply chain better able to handle shocks
 - Hold more inventories of product (although costly)
- Change the fundamental behaviors that lead to price cycles
 - Reduce incentives for response to large price swings (which appear to create price swings)

Many Programs Proposed

- **Refundable Assessments** (Milk Producers' Council, 2007)
- **Mandatory CWT** (Dairy Farmers Working Together, 2007)
- **Growth Management Plan** (Milk Producer's Council, 2009)
- **Dairy Growth Management Initiative** (DFA, 2009)
- **Marginal Milk Pricing** (Agri•Mark, 2010)
- **Dairy Market Stabilization Program** (NMPF, 2010)
- **Farm Savings Accounts** (discussed by DIAC, 2010)
- **Margin Insurance Programs** (NMPF's DPMPP and discussed by DIAC, 2010-11)

Foundation for the Future

- New Safety Net
 - Get rid of Milk Income Loss Contracts
 - Get rid of Dairy Product Price Support Program
 - Replace with Margin Protection Program
- Federal Milk Marketing Order Reform
- Dairy Market Stabilization Program
 - Rolling 3-month base or year earlier month
 - Use Margin triggers
 - No payment for a portion over base
 - Money from penalty milk used on demand programs

Dairy Market Stabilization Program

- The DMSP is a temporary, stand-by program that activates if the “margin” falls below the trigger margin for 2 consecutive months
 - Once the DMSP is triggered, a temporary “base” is established for each dairy facility. That “base is either:
 - A rolling 3-month average of the most recent milk marketing immediately prior to DMSP implementation
- OR
- The same month in the previous year

The DMSP “Triggers”

- <\$6 for 2 consecutive months
 - Producers paid for 98% of their base milk
 - Maximum reduction is 6% of current milk
- <\$5 for 2 consecutive months
 - Producers paid for 97% of their base milk
 - Maximum reduction is 7% of current milk
- <\$4 for 1 month
 - Producers paid for 96% of their base milk
 - Maximum reduction is 8% of current milk

The DMSP “Triggers”

- The DMSP is in effect until the margins are above \$6.00 per cwt for two consecutive months. Then the program ends and the “base” is extinguished.
- Monies paid by handlers for milk produced in excess of these levels will go into a fund, to be managed by a producer board and used to “stimulate the consumption of dairy products.”

Dairy Producer Margin Protection Program

- The DPPMP utilizes the same margin calculation as the DMSP: *National all milk price minus national average feed cost.*
- All producers have the option of signing up for either the base coverage or the base + supplemental coverage.
- The base coverage is free for the producer; the supplemental coverage has an annual premium.

Dairy Producer Margin Protection Program

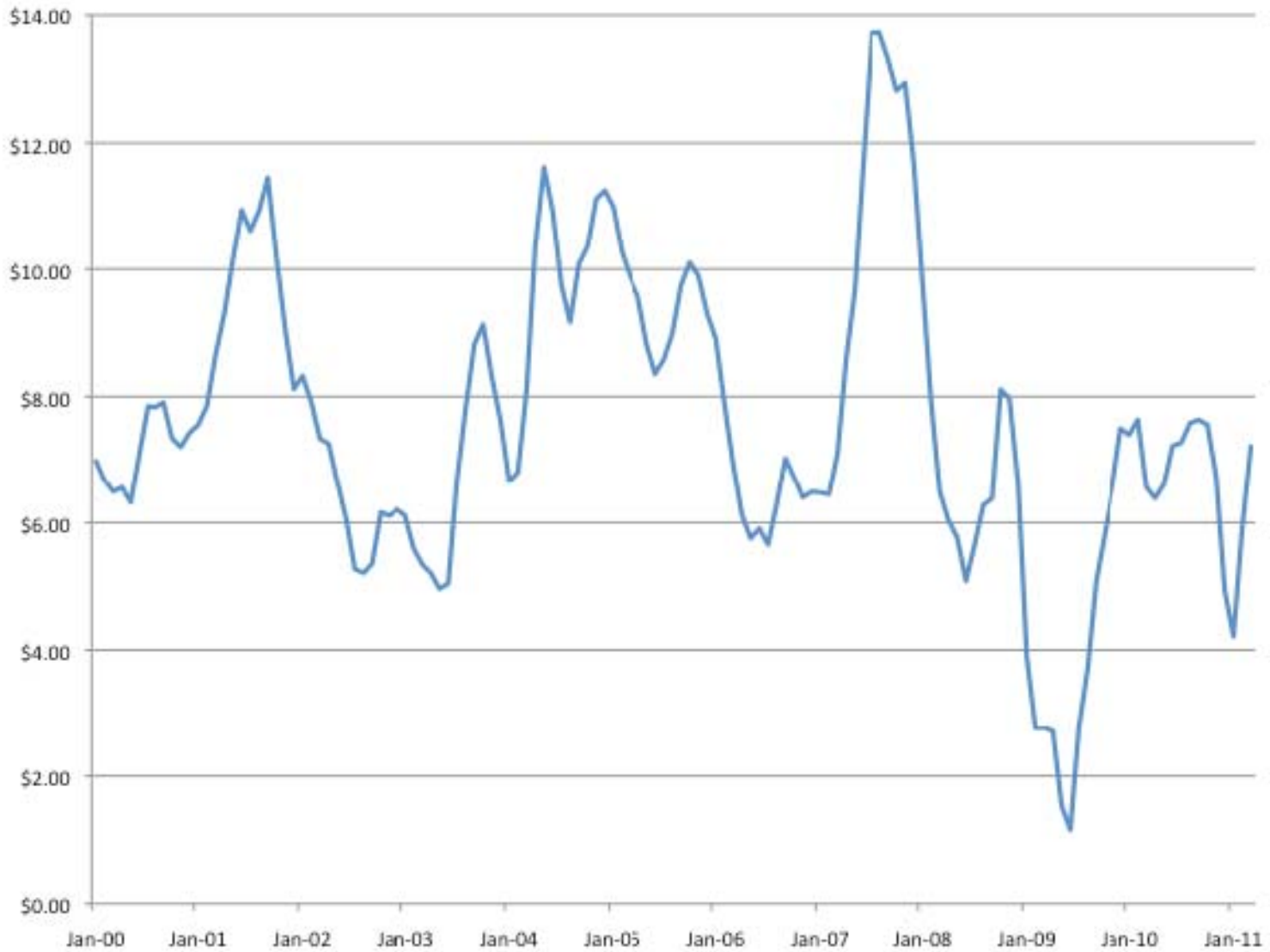
- Each dairy's coverage is based on that dairy's production history.
 - A dairy can get coverage for up to 90% of their highest annual production in the three years prior to this program's implementation.
 - That volume is locked in for the next five years. The dairy cannot get coverage under the DPMPP for production above that level during the five-year life of the program.

Dairy Producer Margin Protection Program

- \$4 base margin coverage is free
- Partially subsidized premiums for supplemental coverage.

<u>Coverage Level</u>	<u>Premium per Cwt.</u>
\$4.50	\$0.015
\$5.00	\$0.036
\$5.50	\$0.081
\$6.00	\$0.155
\$6.50	\$0.230
\$7.00	\$0.434
\$7.50	\$0.590
\$8.00	\$0.922

FFTF Margin



Analysis of the Programs

- Dairy industry consortium requested study of various options
 - FFTF (without Federal Order reform)
 - Marginal Milk Pricing
 - Growth Management Program
 - Completed in September 2010
- DIAC requested analysis of margin plans and farm savings accounts
 - Completed by February 2010

Volatility is Focus...

- Would the 3 programs reduce the variability the U.S. average All-Milk price?
 - Compared to a situation with only current dairy programs
 - Note: NOT enhance milk prices or incomes
- Can we reduce volatility without supply management?
 - What would it cost to do this?

...but other impacts matter

- What would some other key impacts be of the 2 programs?
 - Average All-Milk price
 - Class III prices
 - Cheese net export sales
 - Government costs

Our Analysis

- Used a dynamic systems simulation model
 - Monthly values from 2010 to 2019
- Developed “Baseline” outcomes
 - What would happen if there are no new programs
- Compared outcomes with each program to the Baseline
 - What changes between the two tells us the impact of the program
- Did this without and with shocks
 - Feed costs and export demand

Aside #1

How Helpful are Models?

- We can't avoid the use of models to analyze these options
- We do have two basic choices, though
- **MATHEMATICAL** models
 - Like the one just described
- **MENTAL** models
 - Individuals' view of how things work
- These complement one another
 - There are limits to both

Examine Three Options

- FFTF
 - Dairy Market Stabilization Plan
 - Dairy Producer Margin Protection Plan
- Margin Insurance Program
 - No supply management, No DPPSP or MILC
- Farm Savings Accounts
 - No supply management, No DPPSP or MILC
- These illustrate but don't cover all possible

FFTF Analysis

- DMSP and DPIPP Elements
 - Not order reform
 - Preliminary version, not exactly the same as program announced
- \$6/cwt margin trigger for DMSP
- Margin insurance for DPIPP
 - \$4/cwt base margin protection
 - \$6/cwt supplemental protection
 - \$0.14/cwt premium for supplemental

Margin Insurance Analysis

- Base plan at no cost to producers
 - Protects \$4 margin of milk less feed cost
 - Up to a cap of 2.4 million lbs
- Supplemental plan with 2 tiers
 - Tier 1 protects \$6 margin, \$0.30/cwt premium for covered milk
 - Tier 2 protects \$8 margin, \$1.62/cwt premium for covered milk
- Elimination of DPPSP and MILC

Farm Savings Account Analysis

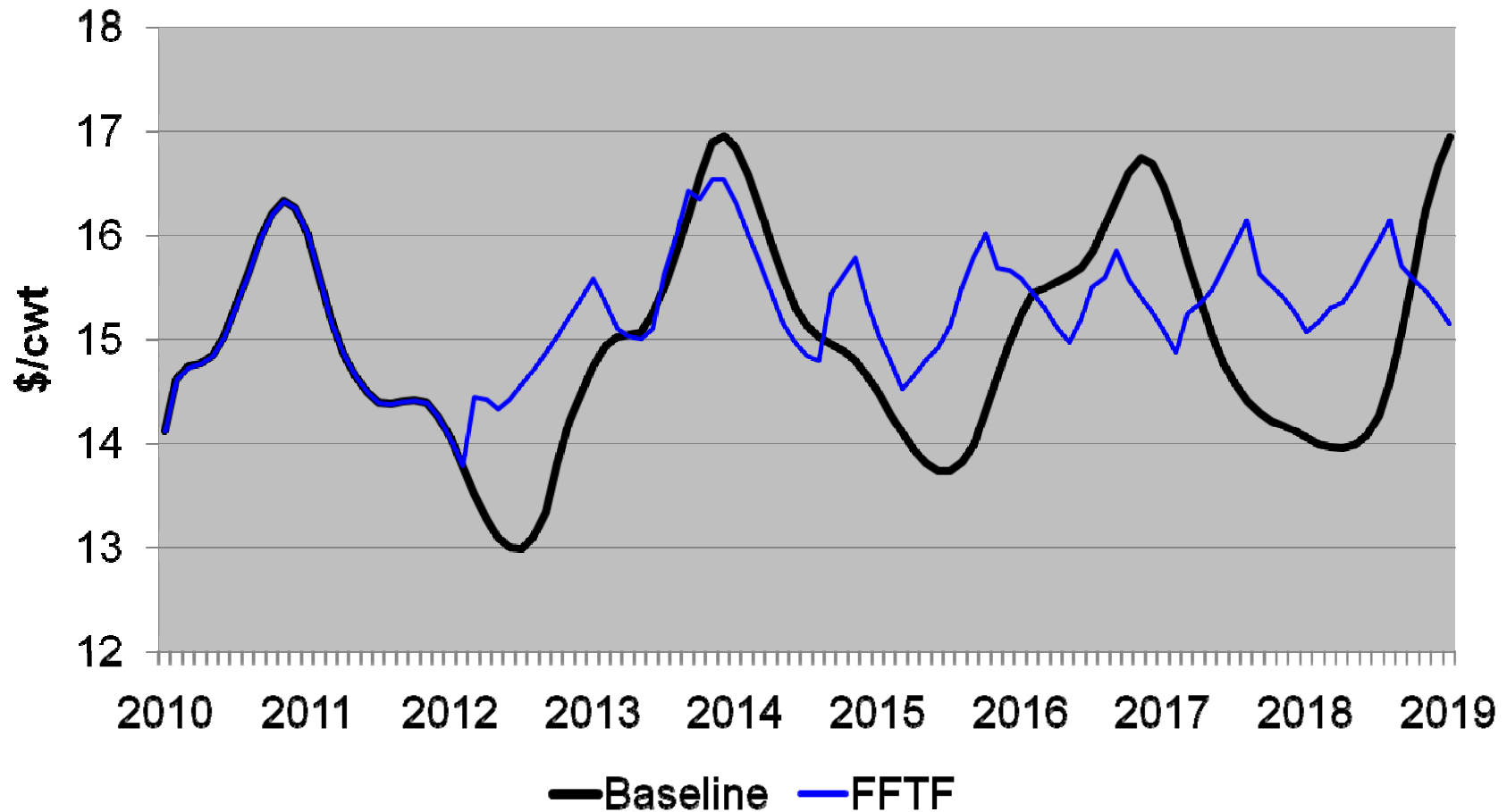
- Producer contributions
 - Based on difference between current year and average year income
 - Assumed a % of this contributed
- Government matching
 - 1 to 1 up to \$10,000 match
 - 4 to 1 up to \$40,000 total match
 - Under \$750,000 NFOI for eligibility
- Elimination of DPPSP and MILC

What We Found

- Both programs could **reduce variability** in the All-Milk price
- Programs have **different** impacts on the **average All-Milk price**
- Programs have **different** impacts on **Class III prices**
- Programs have **different** impacts on **cheese net exports**
- Programs have **different** impacts on **government expenditures** (taxpayer \$)

Variability of the All-Milk Price

(No Shocks)



Note the “path dependency.” Program changes pattern of prices.

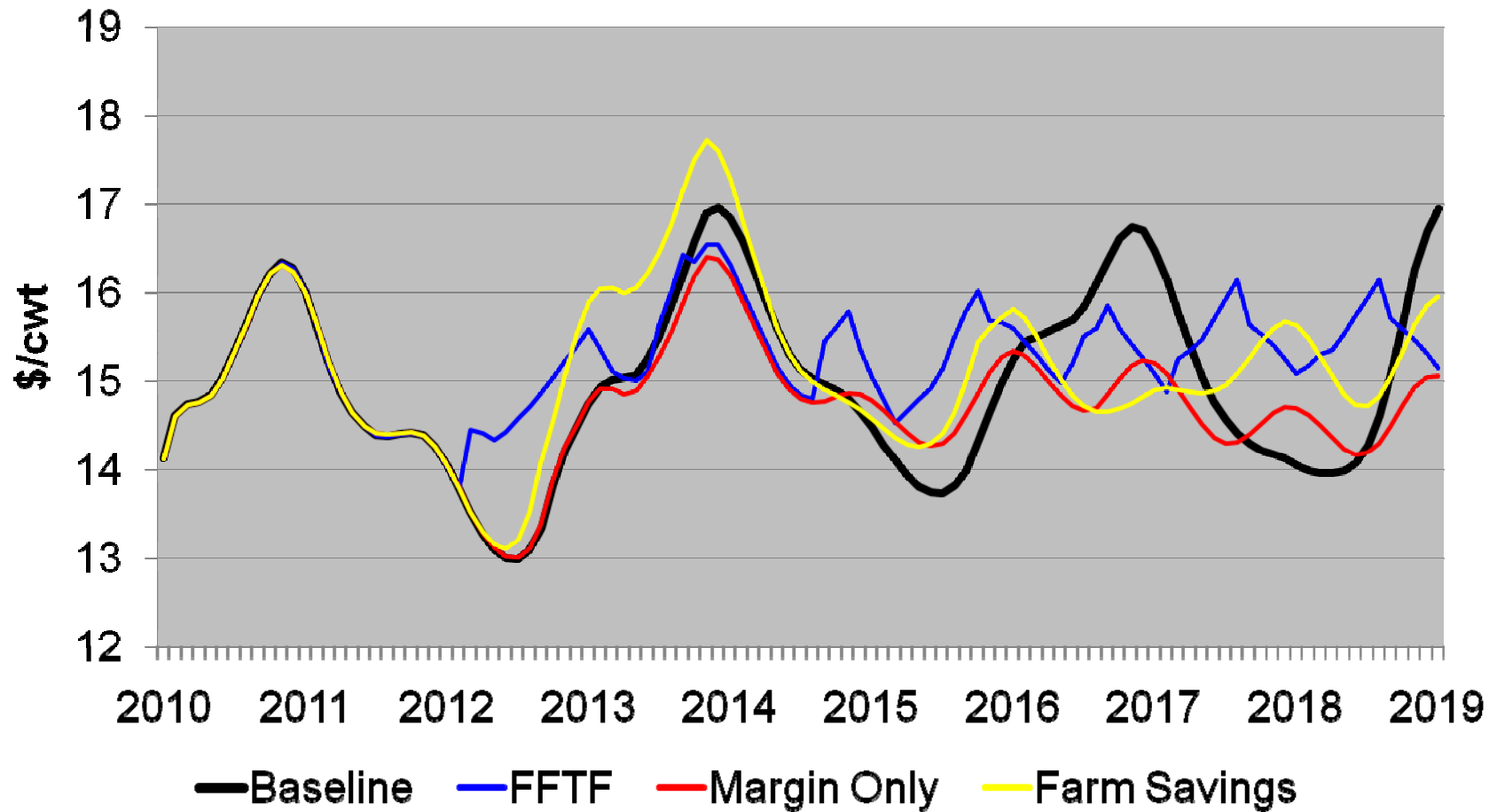
Aside #2

Using Past Data?

- “Path dependency” means program changes future outcomes
 - In this case, the pattern of prices
- Implication: don't past price series to examine the potential impacts of a proposed program
 - If the program is likely to change the pattern
- Example: comparing MILC to DPIPP
 - Using data for 2002 to 2010

Variability of the All-Milk Price

(No Shocks)



Variation in All-Milk Price

Variable	Baseline	FFTF	Margin Insurance Only	Farm Savings Accounts
		<i>Change from Baseline</i>		
All-Milk price, average 2013-2019, \$/cwt	15.32	+0.17	-0.21	+0.06
Variation of All-Milk Price, 2013-2019, \$/cwt	0.83	-0.48	-0.41	-0.18

Variation in All-Milk price is reduced by programs

Variation in All-Milk Price

Variable	Baseline	FFTF	Margin Insurance Only	Farm Savings Accounts
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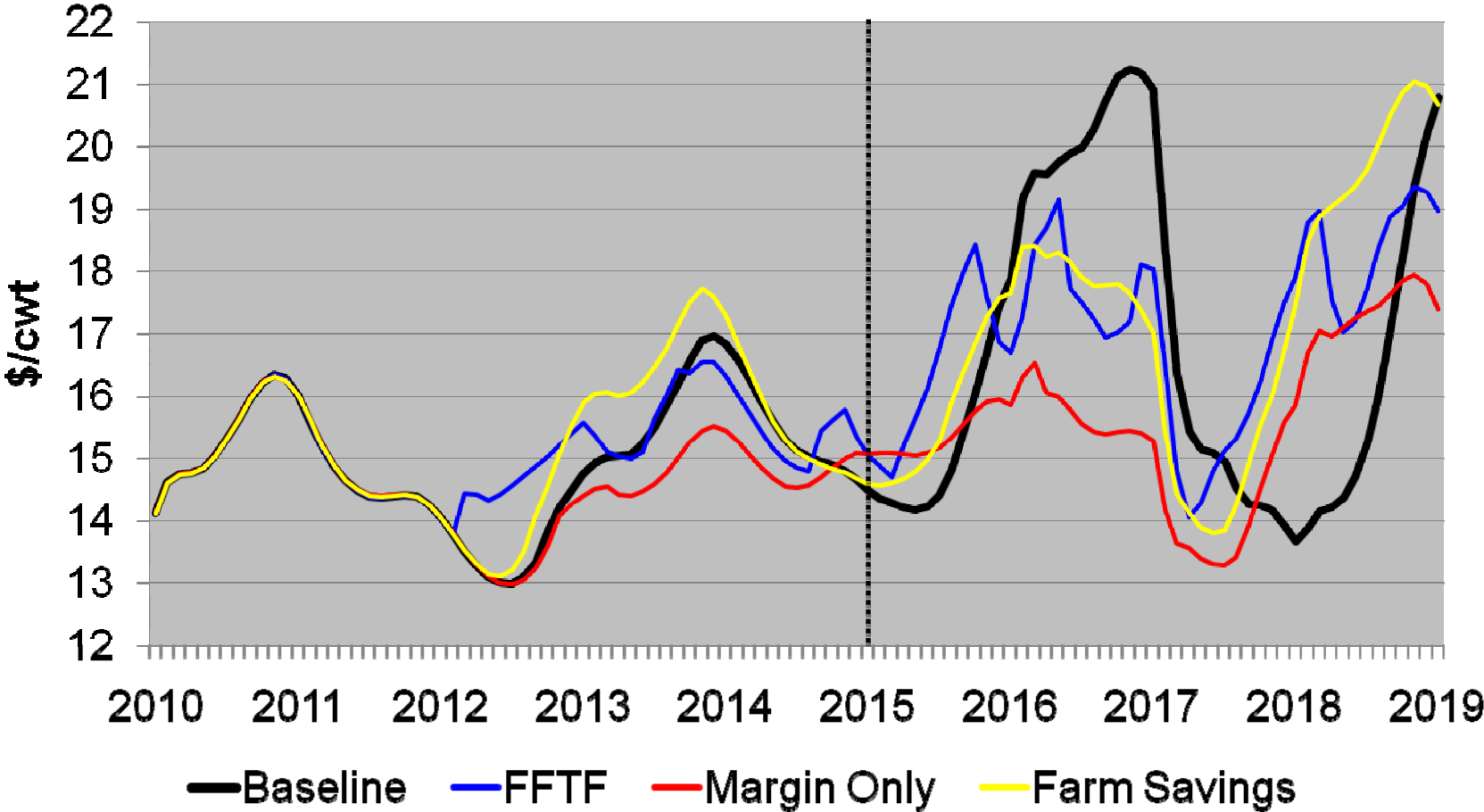
All-Milk price impact varies

Do Programs Help with a Meltdown?

- Do they prevent a prolonged period of low prices?
 - In response to major shocks
- Do they make the recovery faster?
- We examined shocks to feed costs and exports similar to what occurred in 2007-2009
 - 20% increase in feed costs
 - Large increase in US exports for one year
 - Decrease in US exports for the following year

All-Milk Price With Shocks

Shocks assumed to begin in 2015



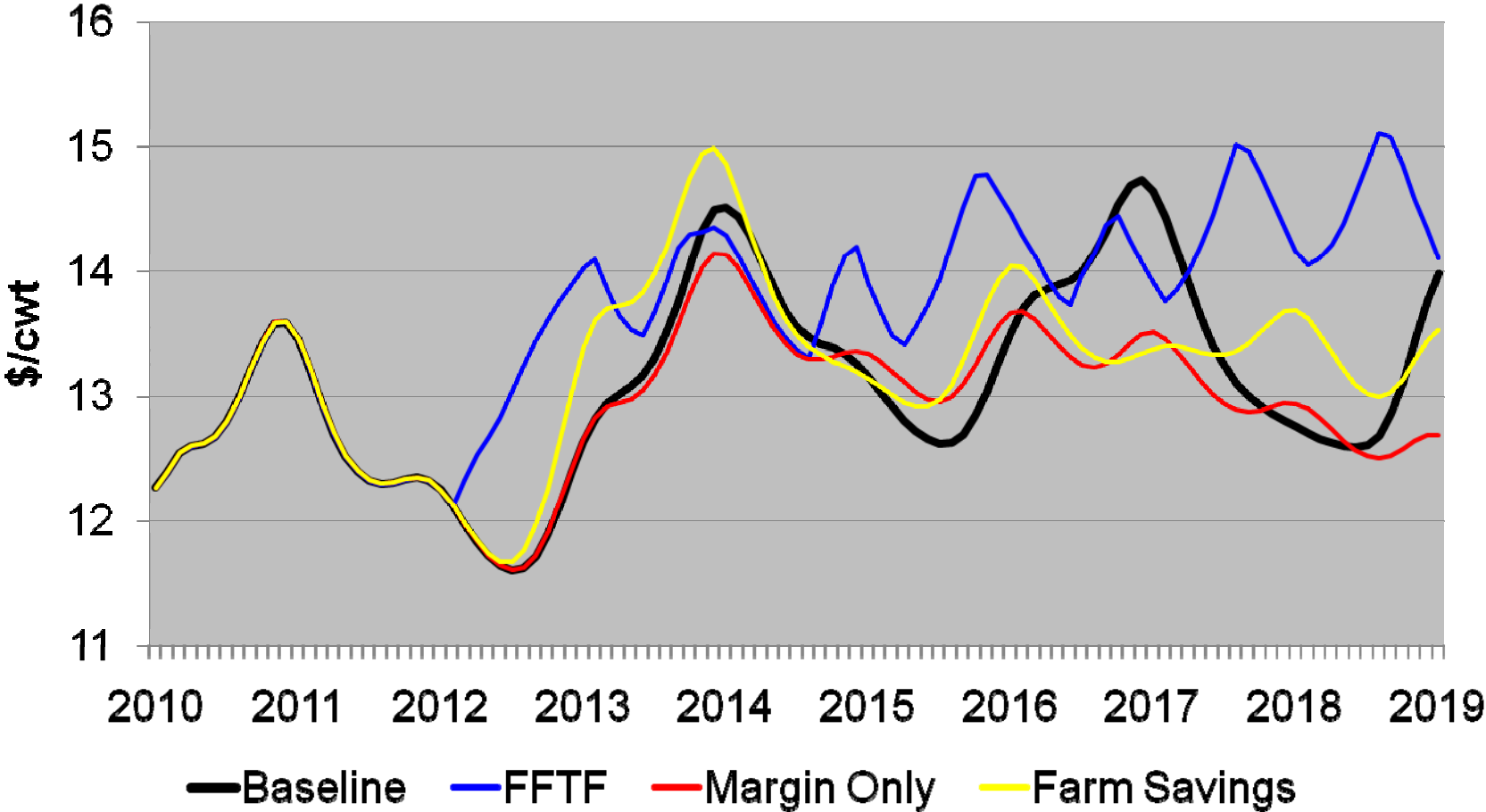
Range of values reduced

Programs With Shocks

- Less effective than in absence of shocks
 - To be expected
- But still mitigate price variability
- Reduce length of time that prices are low after large shock

Class III Price

(No Shocks)

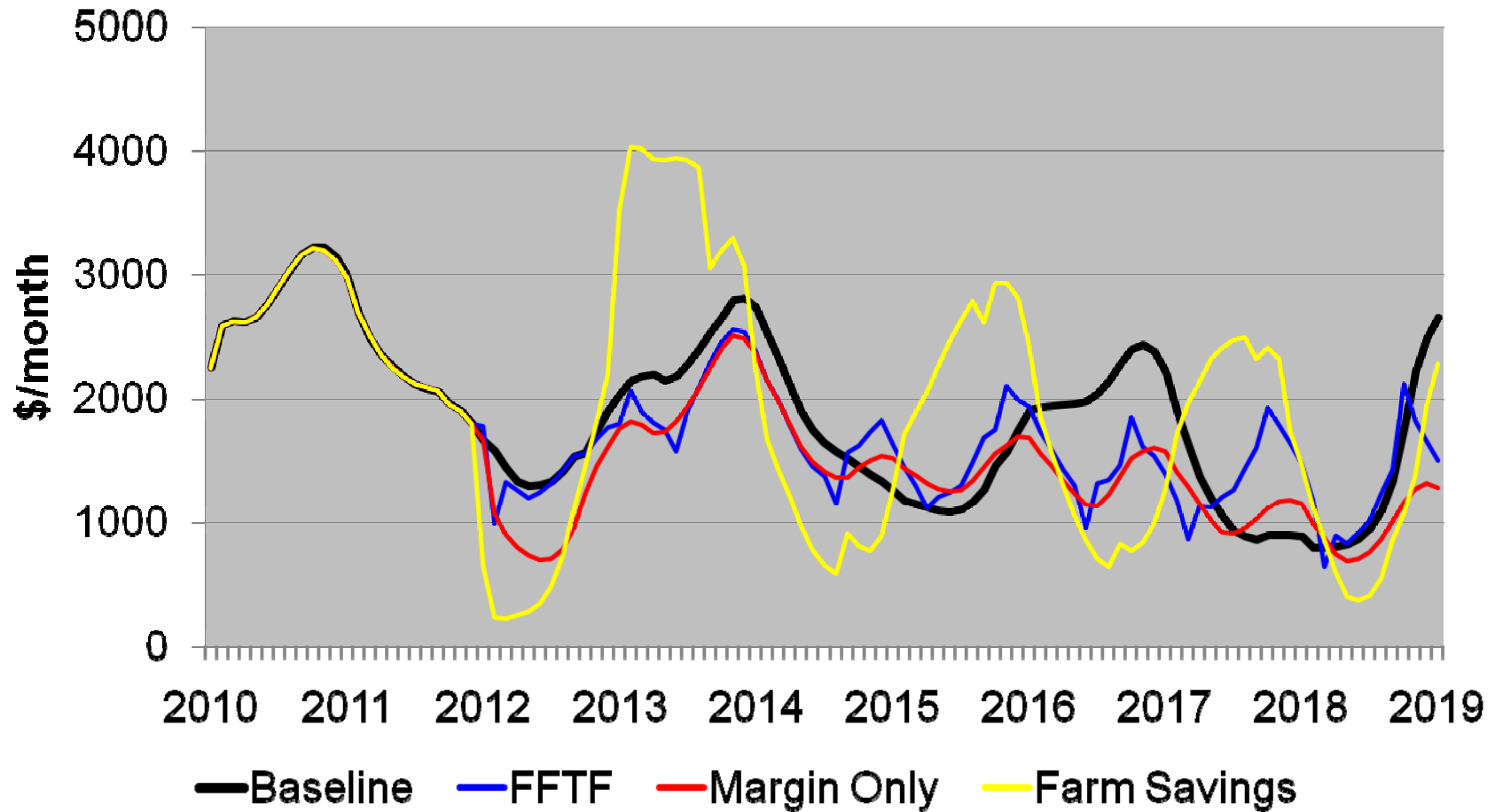


Average Class III Price

Variable	Baseline	FFTF	Margin Insurance Only	Farm Savings Accounts
		<i>Change from Baseline</i>		
All-Milk price, average 2013-2019, \$/cwt	15.32	+0.17	-0.21	+0.06
Variation of All-Milk Price, 2013-2019, \$/cwt	0.83	-0.48	-0.41	-0.18
Average Class III Price, 2013-2019, \$/cwt	13.43	+0.71	-0.23	+0.13

Net Farm Operating Income

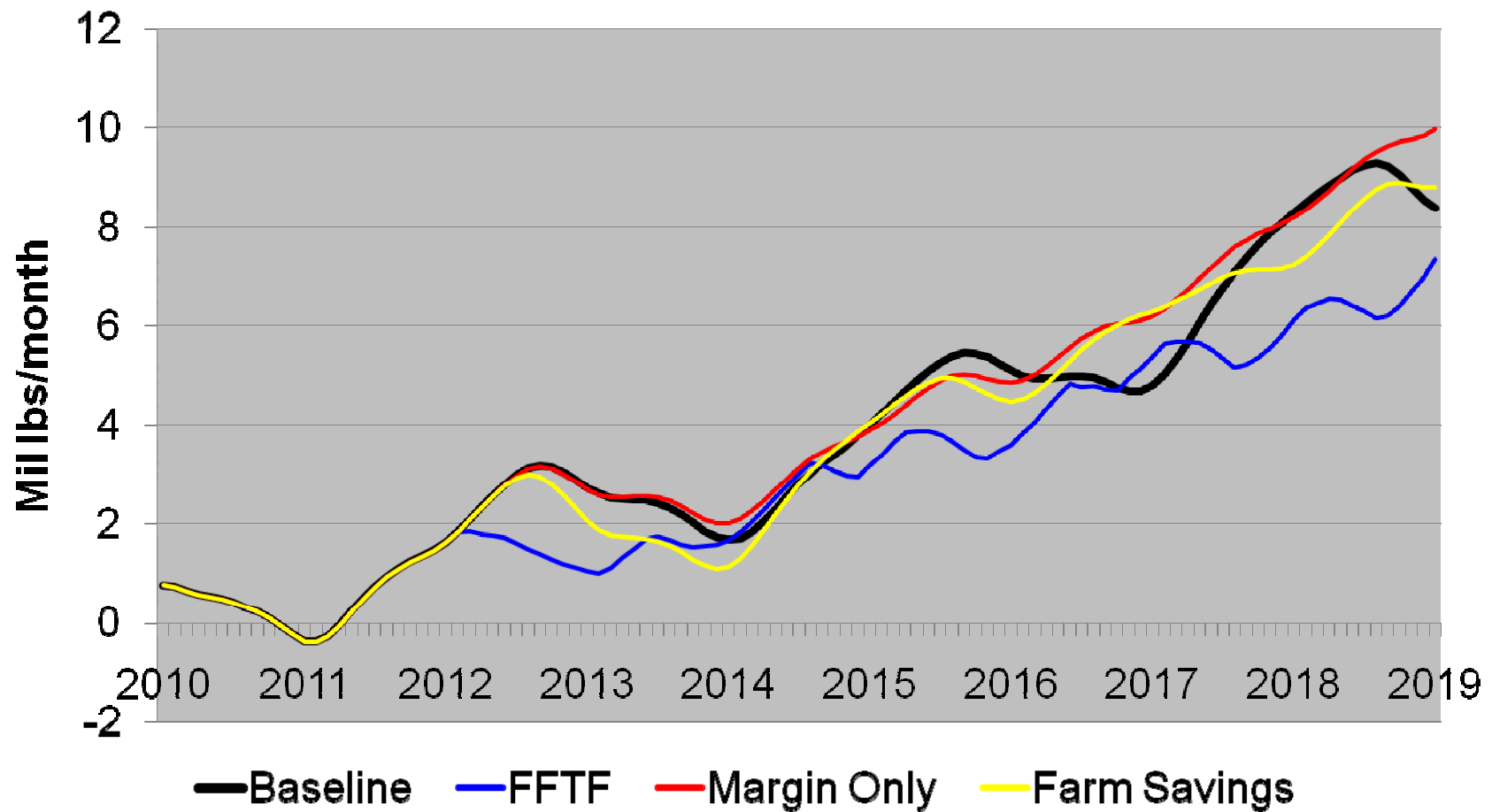
(No Shocks)



For our “Small” farm size < 250 cows

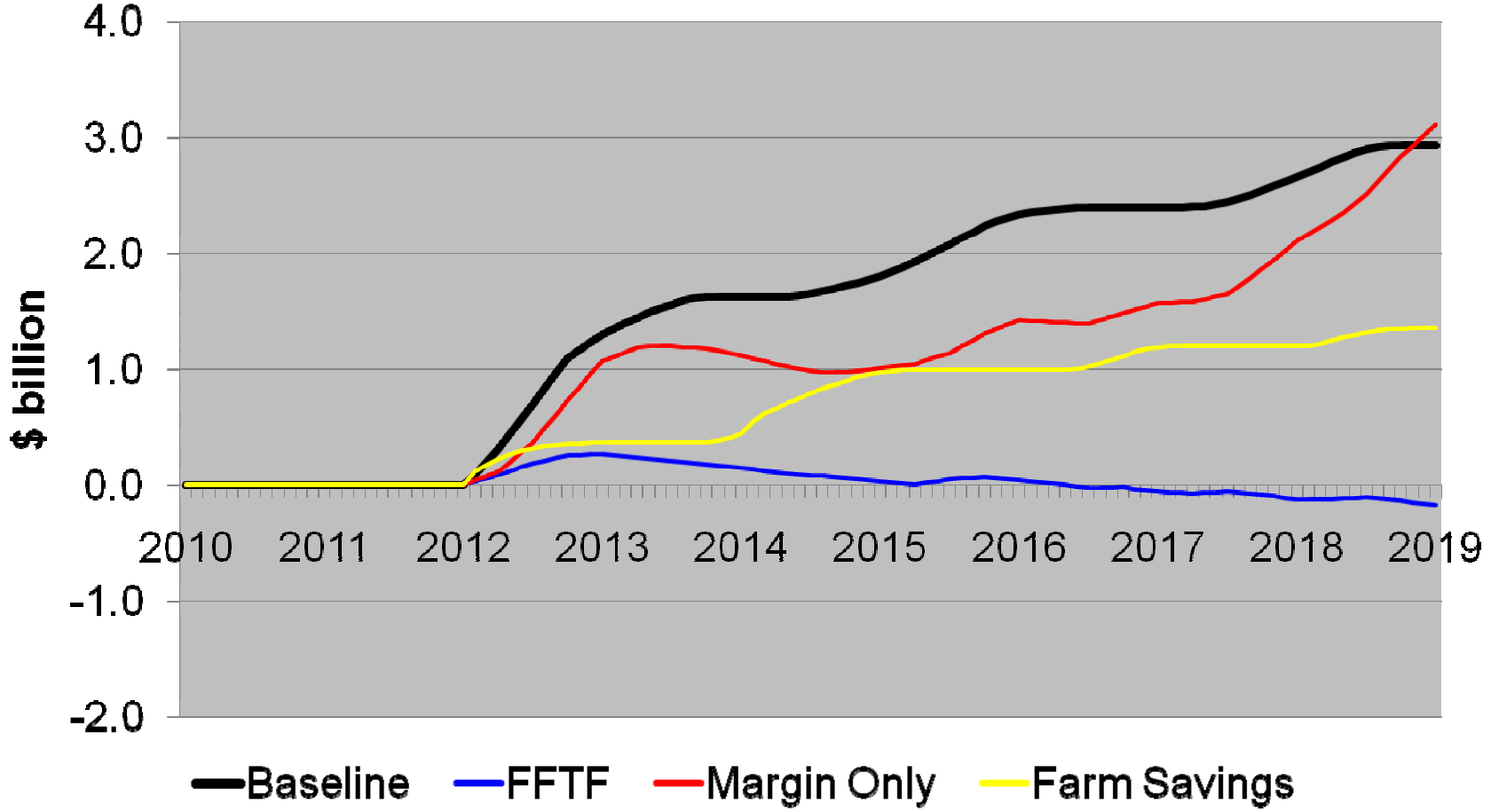
Cheese Net Exports

(No Shocks)



Cumulative Gov't Expenditures

(No Shocks)



Summary of Effects

- Programs analyzed would reduce volatility
- Programs could reduce the negative effects of major shocks
- Have differing effects on All-milk price, Class III price, cheese net exports and government expenditures

Not A Simple Story

- Tendency to pick and choose effects that either like or don't like
- Encourage a broad perspective of the different impacts