Agricultural trade drama and implications for the agricultural economy

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Land Valuation Conference
Ames, Iowa
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Food & Agricultural Policy Research Institute
University of Missouri

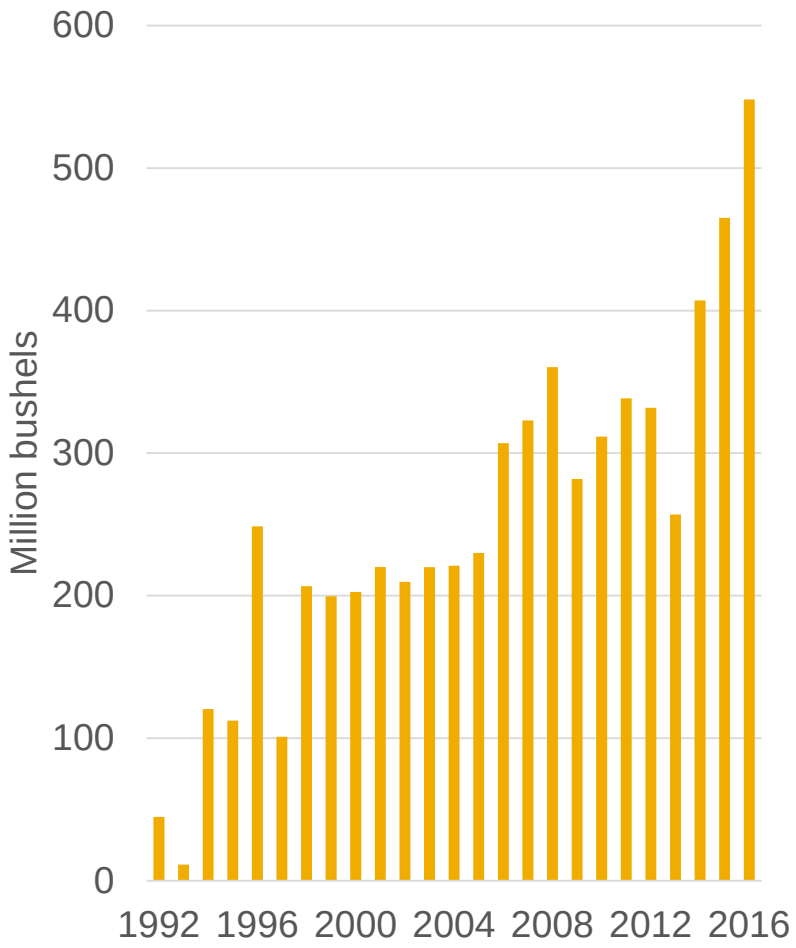
Agenda

- Trade issues in the news and agricultural market implications
- Assumptions behind the FAPRI market outlook
  - Macroeconomy
  - Policy
- Some big picture considerations: how did we get here?
- Outlook for crops and livestock
  - Corn, soybeans
  - Cattle, hogs, poultry, milk
- Farm sector outlook: farm income and balance sheet
- Policy issues and other sources of uncertainty

Some of the trade drama

- No to Trans-Pacific Partnership (TPP)
- Intention to renegotiate NAFTA
  - Disputes with Canada on dairy, softwood lumber
  - Dispute with Mexico on sugar, HFCS
- Intention to renegotiate Korean-US agreement
- China not a “currency manipulator,” but…

Mexico corn imports from U.S.



Calendar year 2016 data	mil. bu.
U.S. corn exports to Mexico	548
U.S. corn exports	2,204
Mexico imports as share of total U.S. corn exports	25%
U.S. corn production	15,148
Mexico imports as share of total U.S. corn production	3.6%

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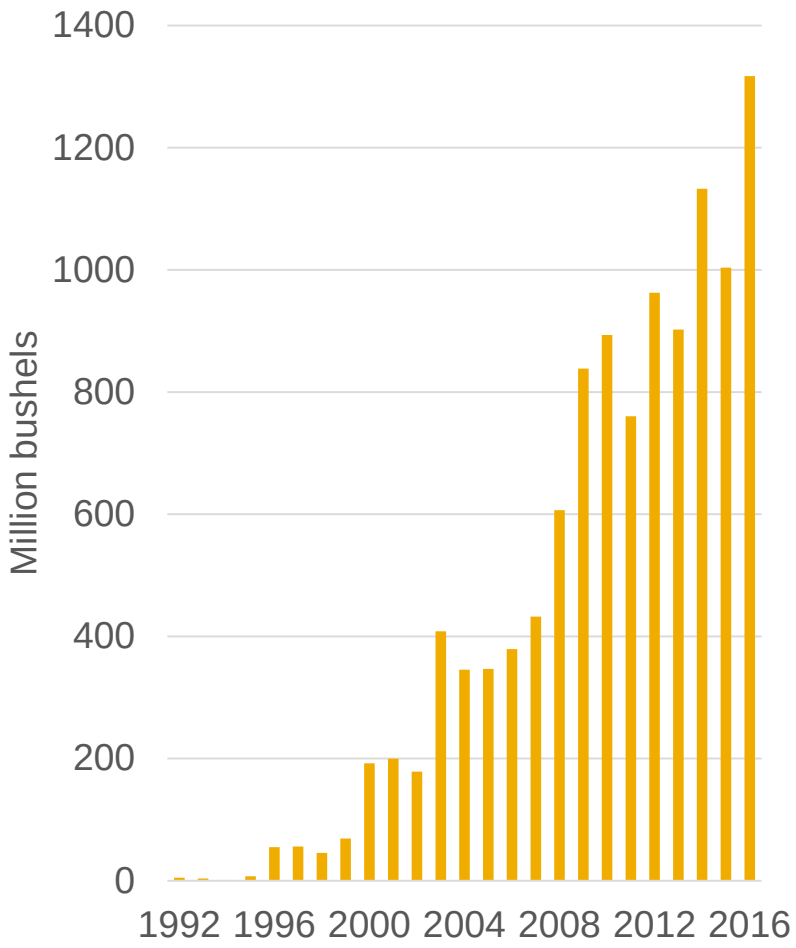
China soybean imports from U.S.



Calendar year 2016 data	mil. bu.
U.S. soybean exports to China	1,317
U.S. soybean exports	2,118
China imports as share of total U.S. soybean exports	62%
U.S. soybean production	4,307
China imports as share of total U.S. soybean production	31%

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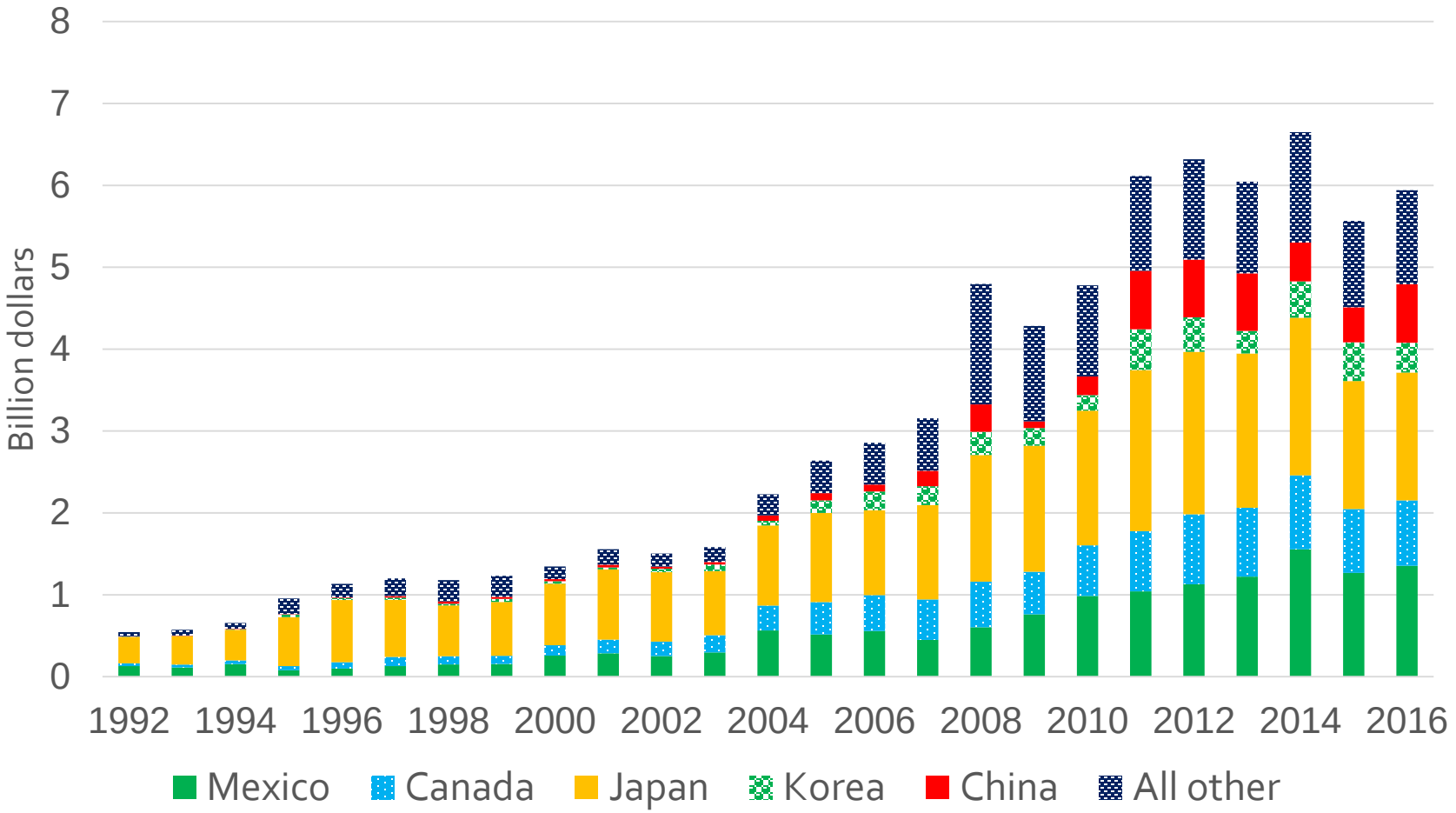
U.S. pork and pork product exports



Source: USDA FAS Global Agricultural Trade System Online

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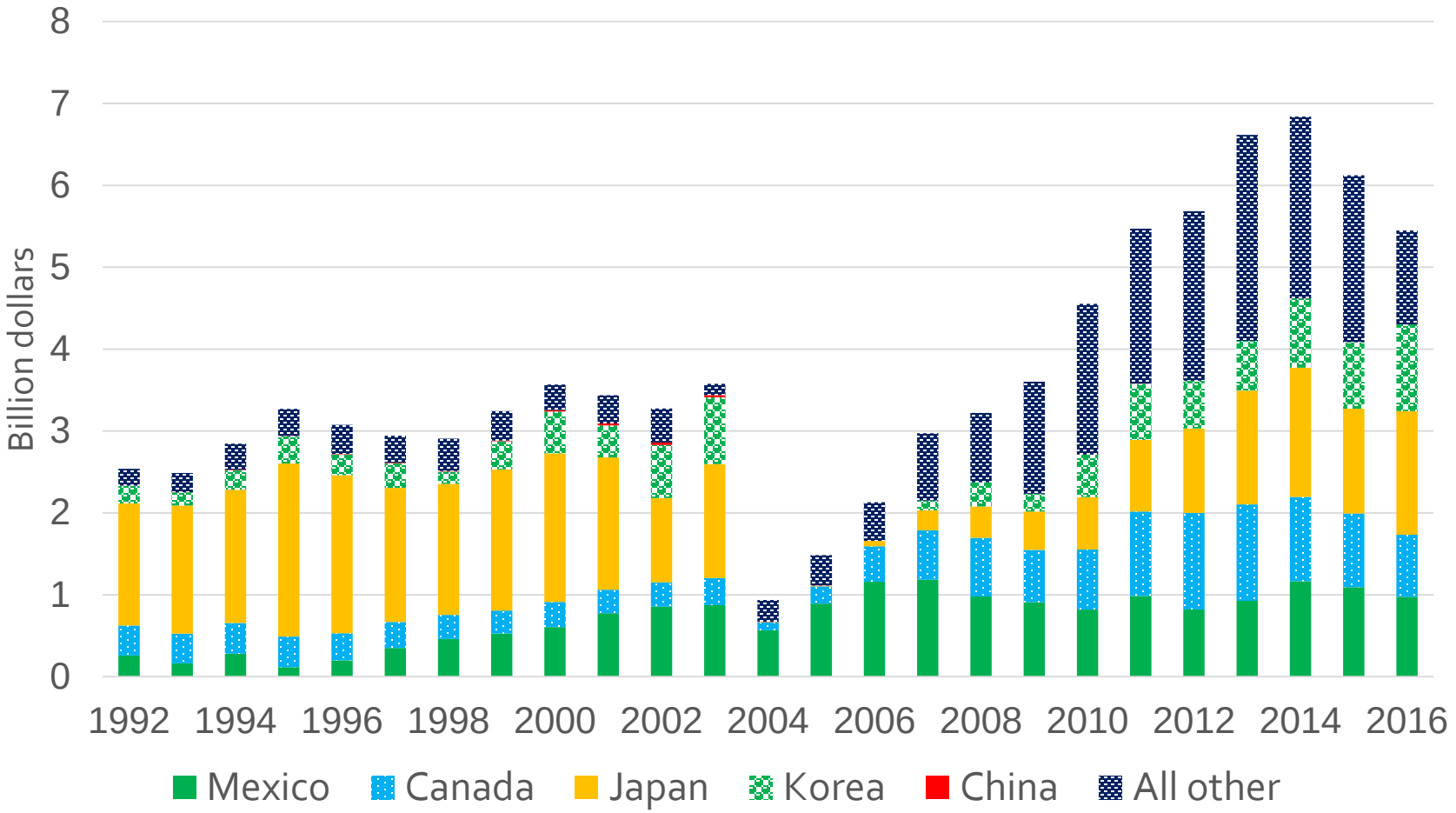
U.S. beef and beef product exports



Source: USDA FAS Global Agricultural Trade System Online

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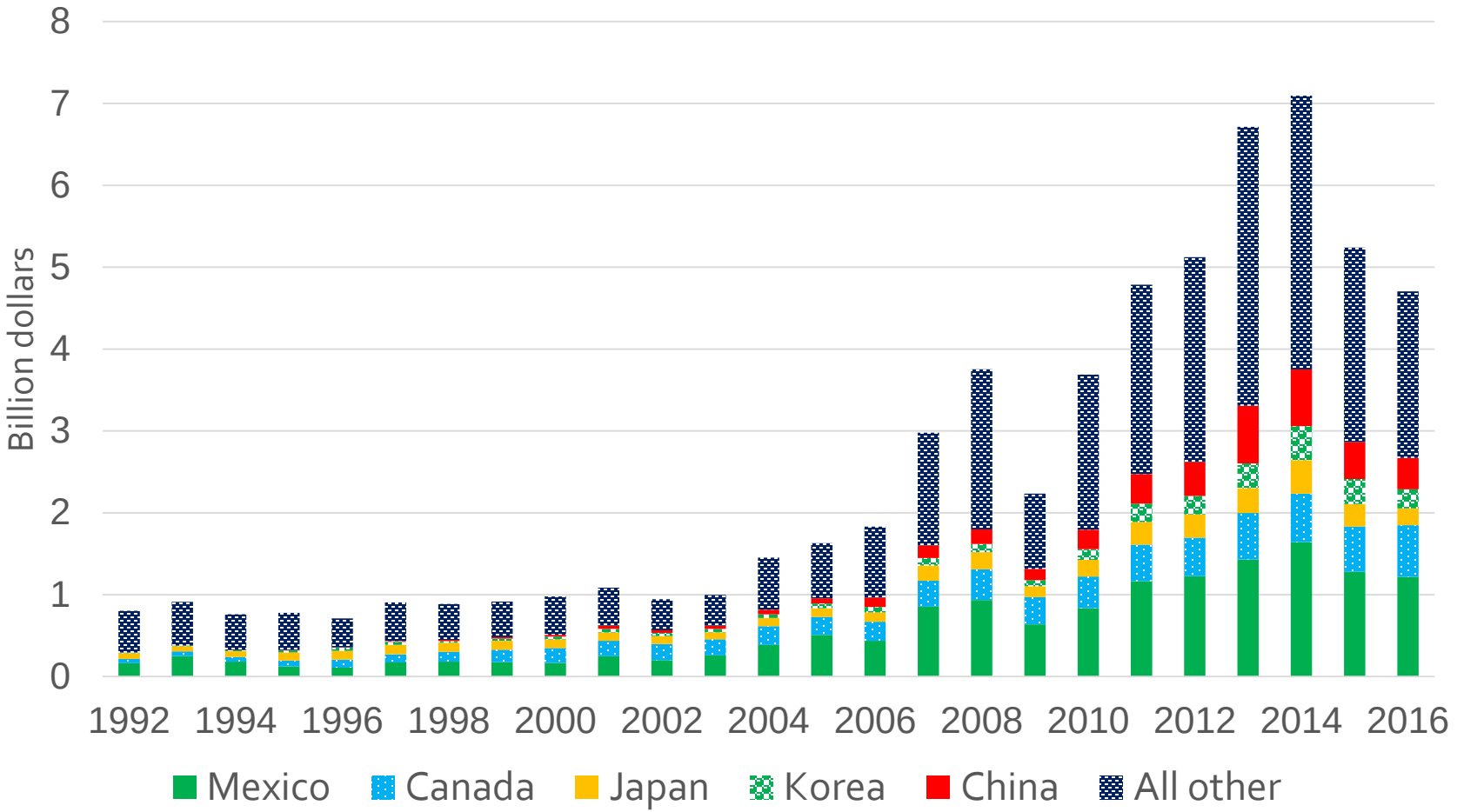
U.S. dairy product exports



Source: USDA FAS Global Agricultural Trade System Online

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Things to watch on the trade front

- Risks
  - Renegotiations of NAFTA and other agreements
  - TPP without the U.S.?
  - Foreign retaliation to U.S. trade moves

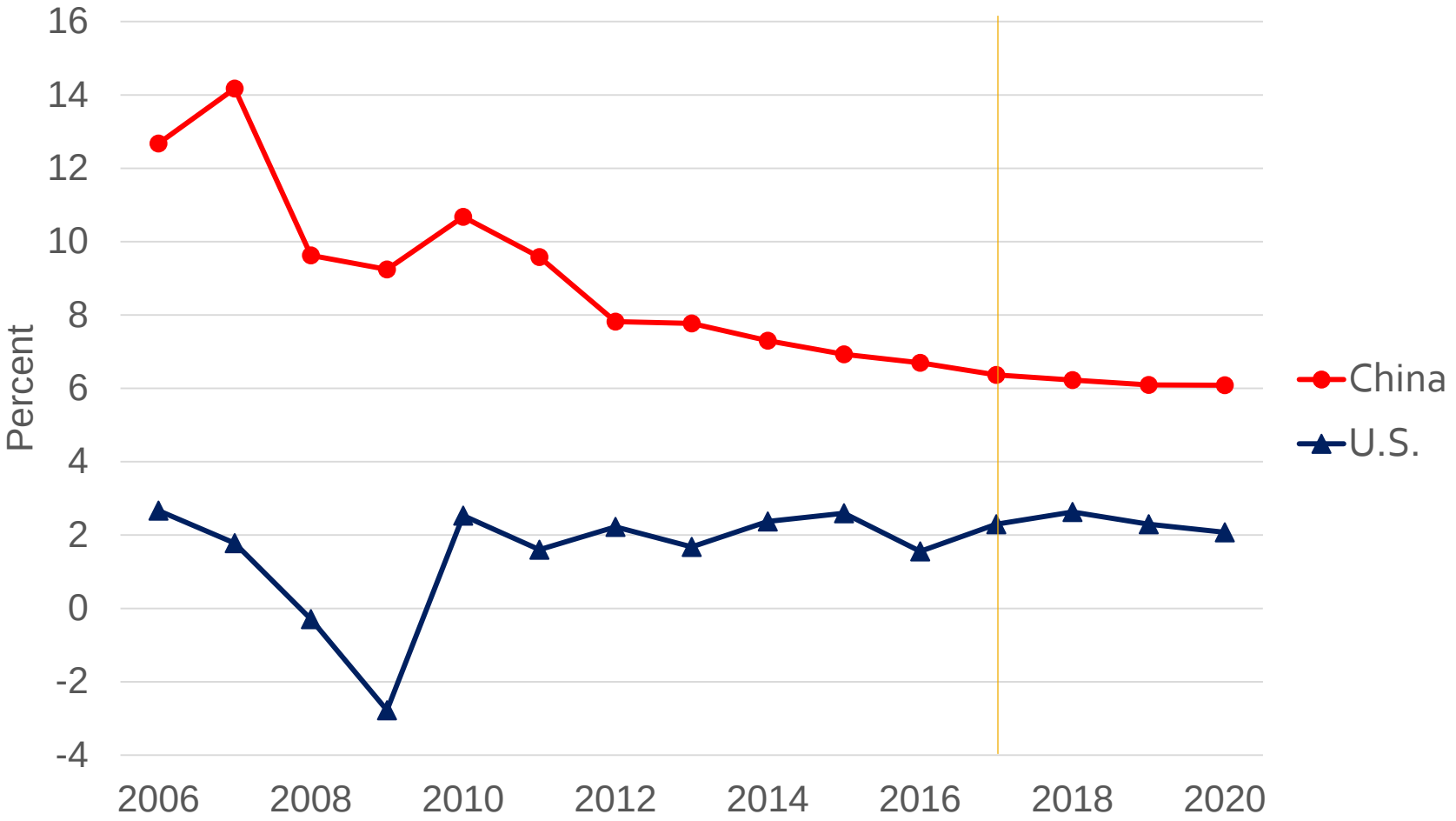
- Opportunities
  - New bilateral agreements
  - Renegotiation of NAFTA and other agreements
  - Using trade enforcement tools to push for policy reform elsewhere

The FAPRI-MU outlook: data sources

- Macro data and projections: IHS Markit
- Historical market data: USDA
- Projections primarily from FAPRI-MU baseline released March 13
  - Assumes current policies continue
  - Briefing book (also at www.fapri.missouri.edu) includes some of this information
- Some updates to reflect information available on May 15

U.S. and China real GDP growth

IHS Markit, December 2016



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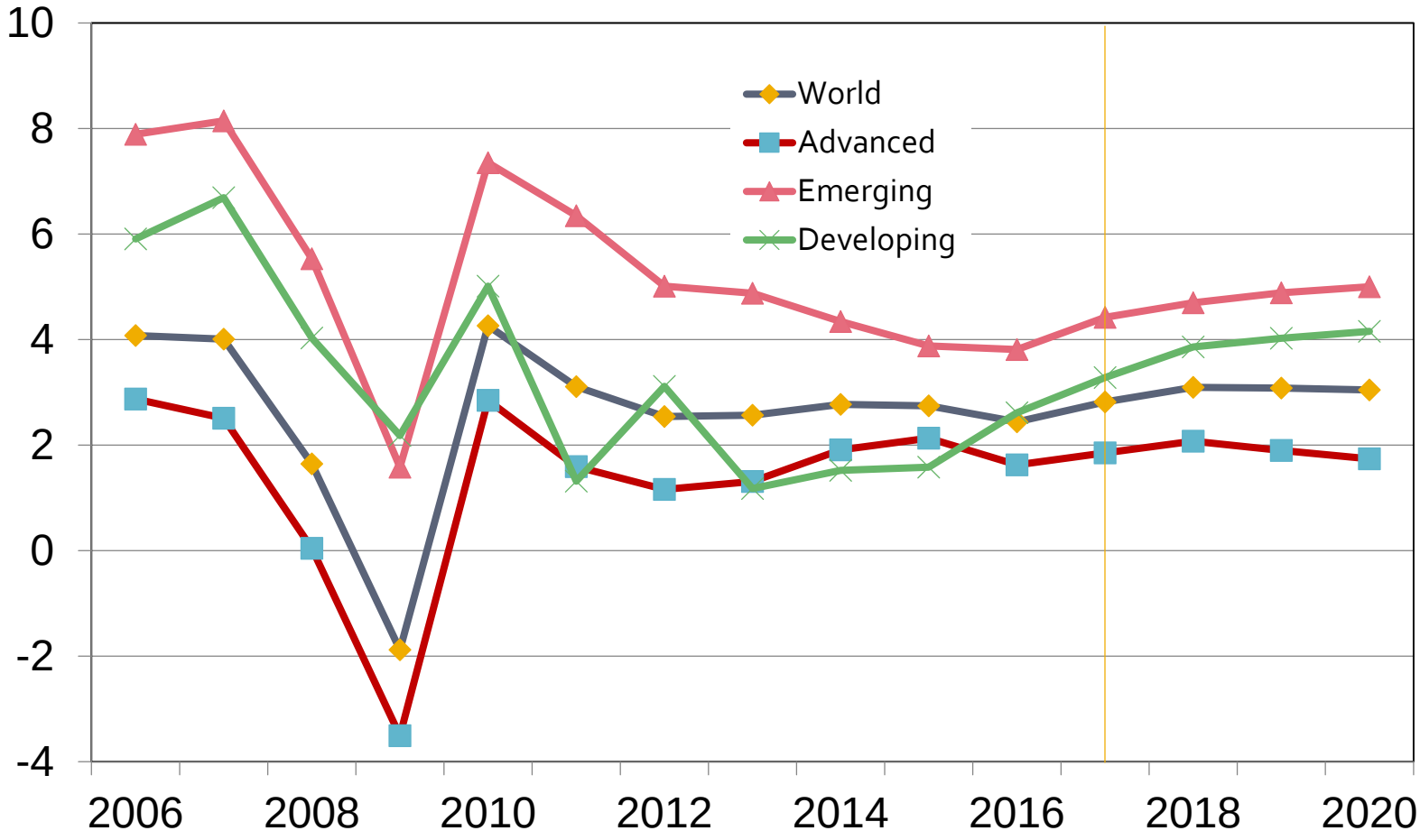
Global real GDP growth outlook

Percent increase from previous year

	2015	2016	2017	2018
World	2.7	2.4	2.8	3.1
U.S.	2.6	1.6	2.3	2.6
China	6.9	6.7	6.4	6.2
India	7.5	6.9	7.4	7.7
European Union	2.1	1.9	1.5	1.7
Japan	1.2	1.0	1.0	0.9

Sources: IHS Markit, December 2016.

GDP growth rates: 5, 4, 3 and 2
(Percent per year)



Sources: IFS, IHS Markit, Dec. 2016

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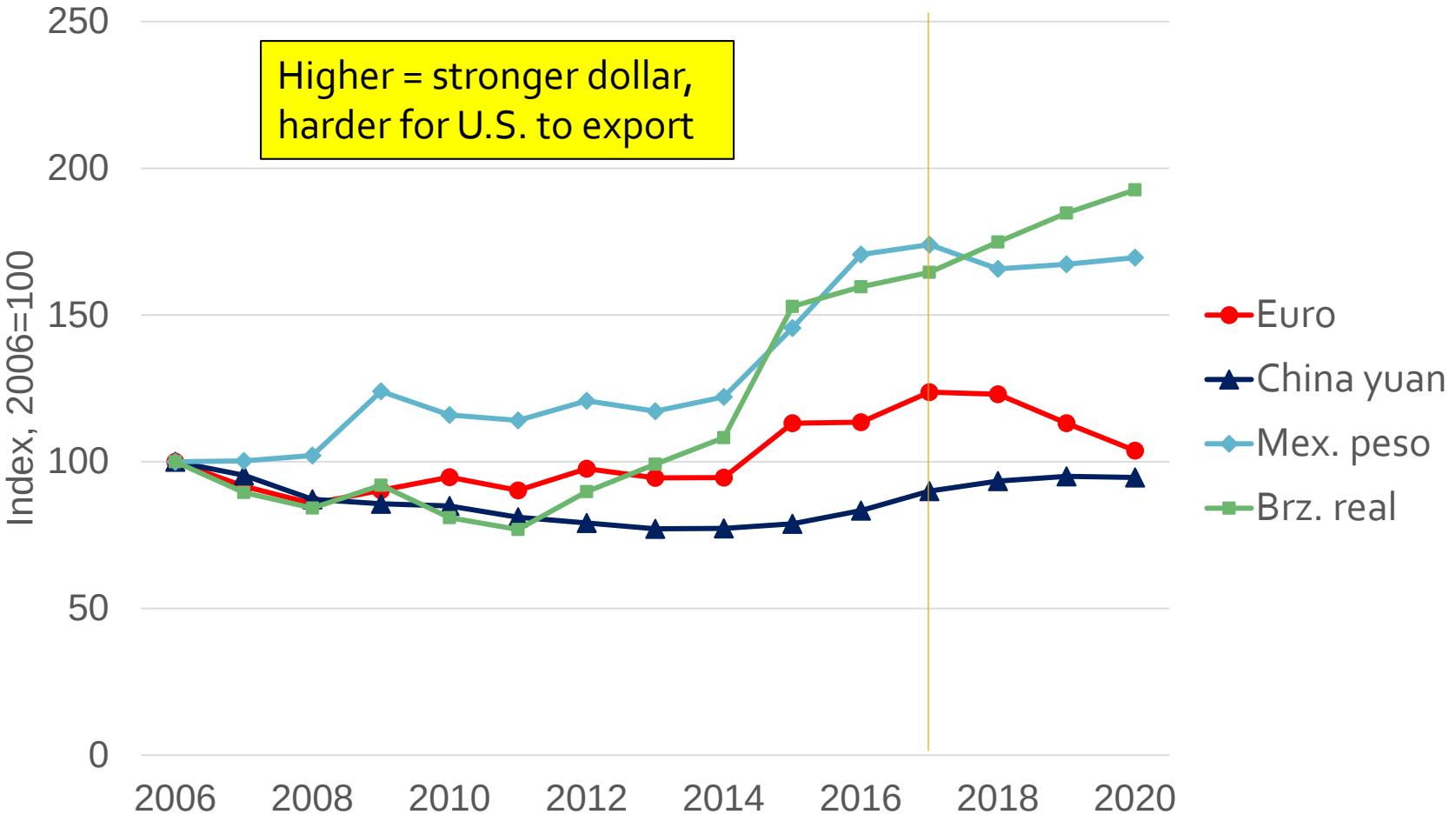
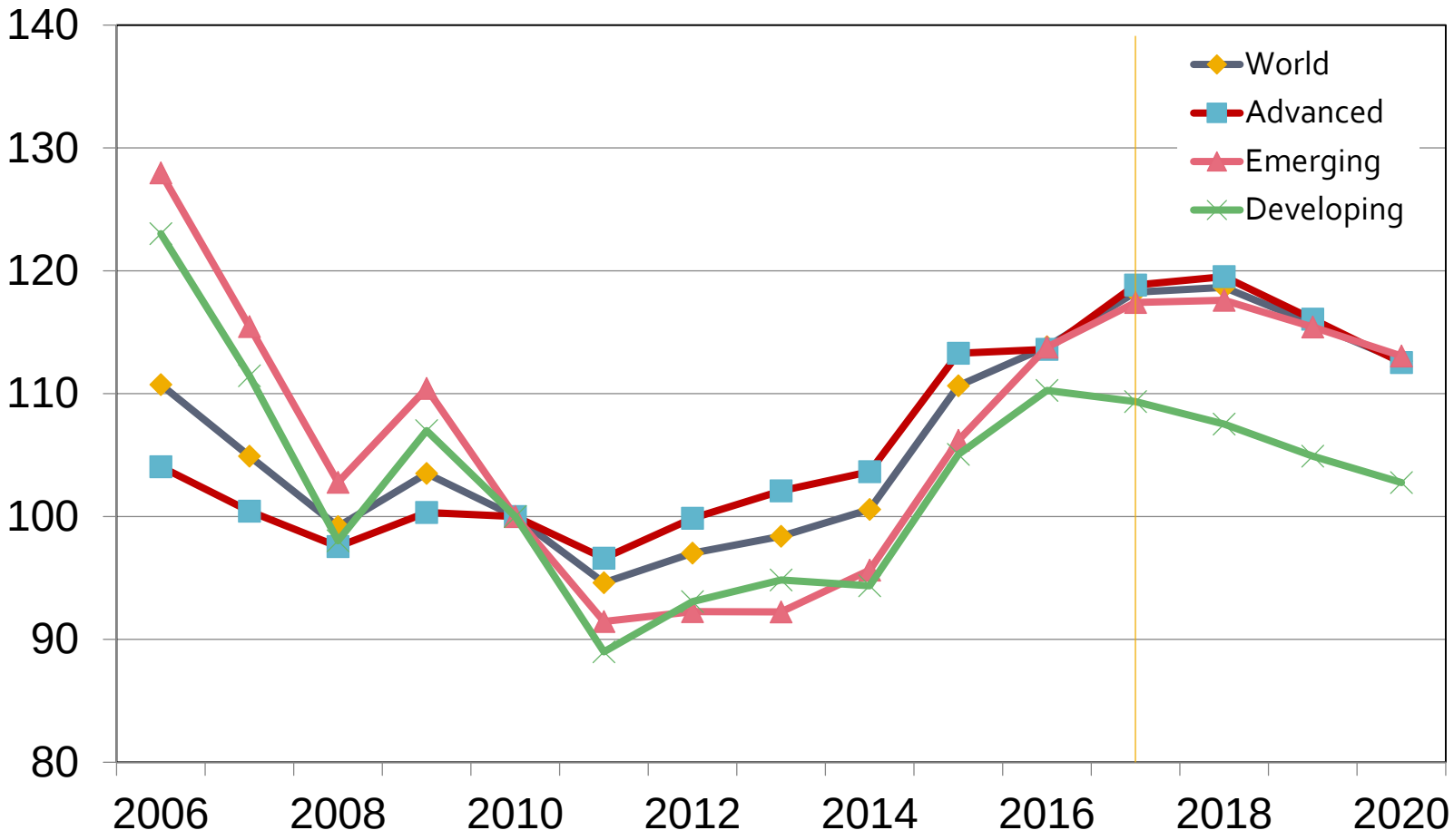
Nominal exchange rates

2006=100, IHS Markit, December 2016



Strong dollar weakens after 2018

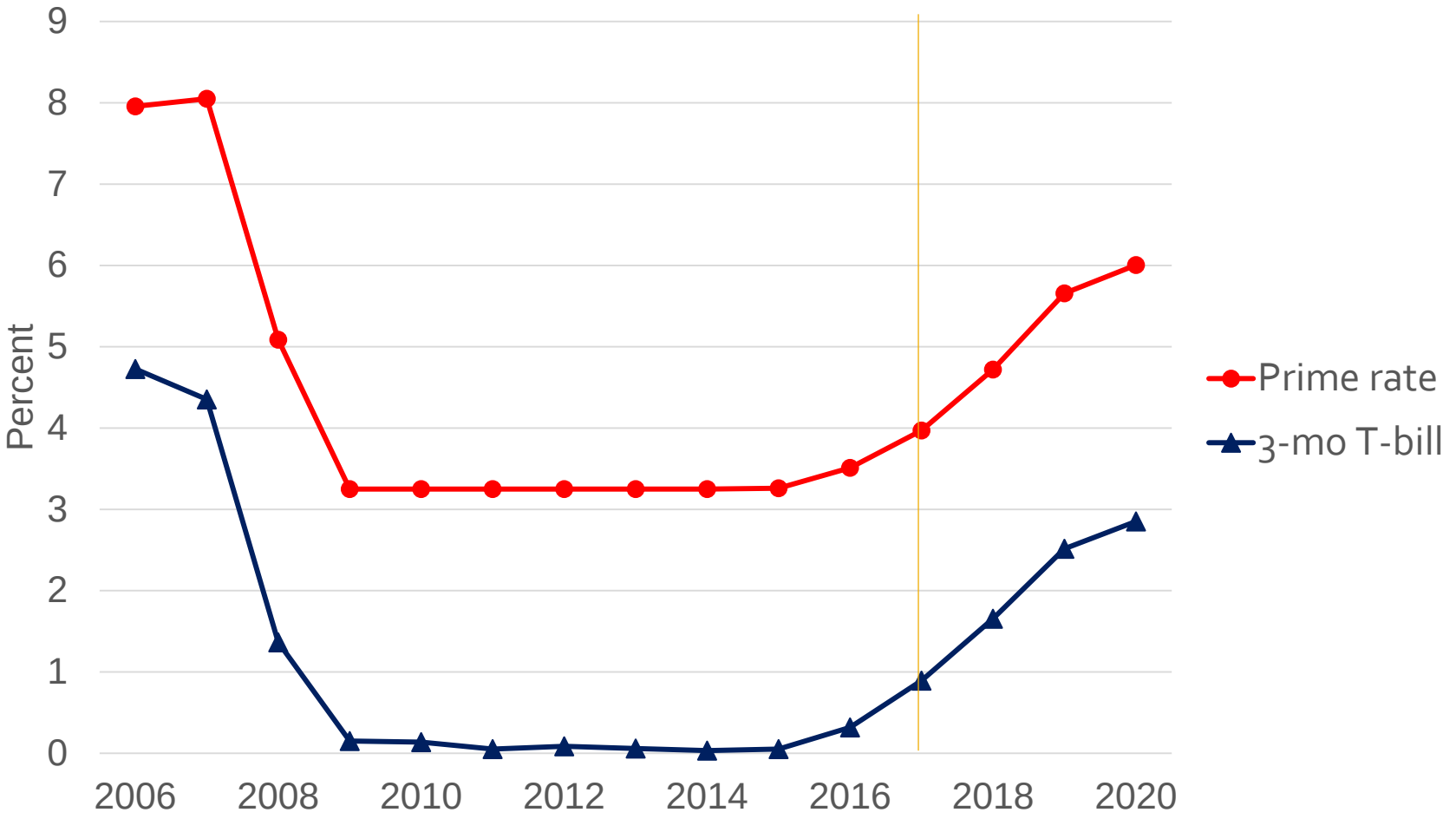
(Real exchange rate index, 2010=100)



Sources: Calculations by Mike Helmar based on IFS, IHS Markit data, Dec. 2016

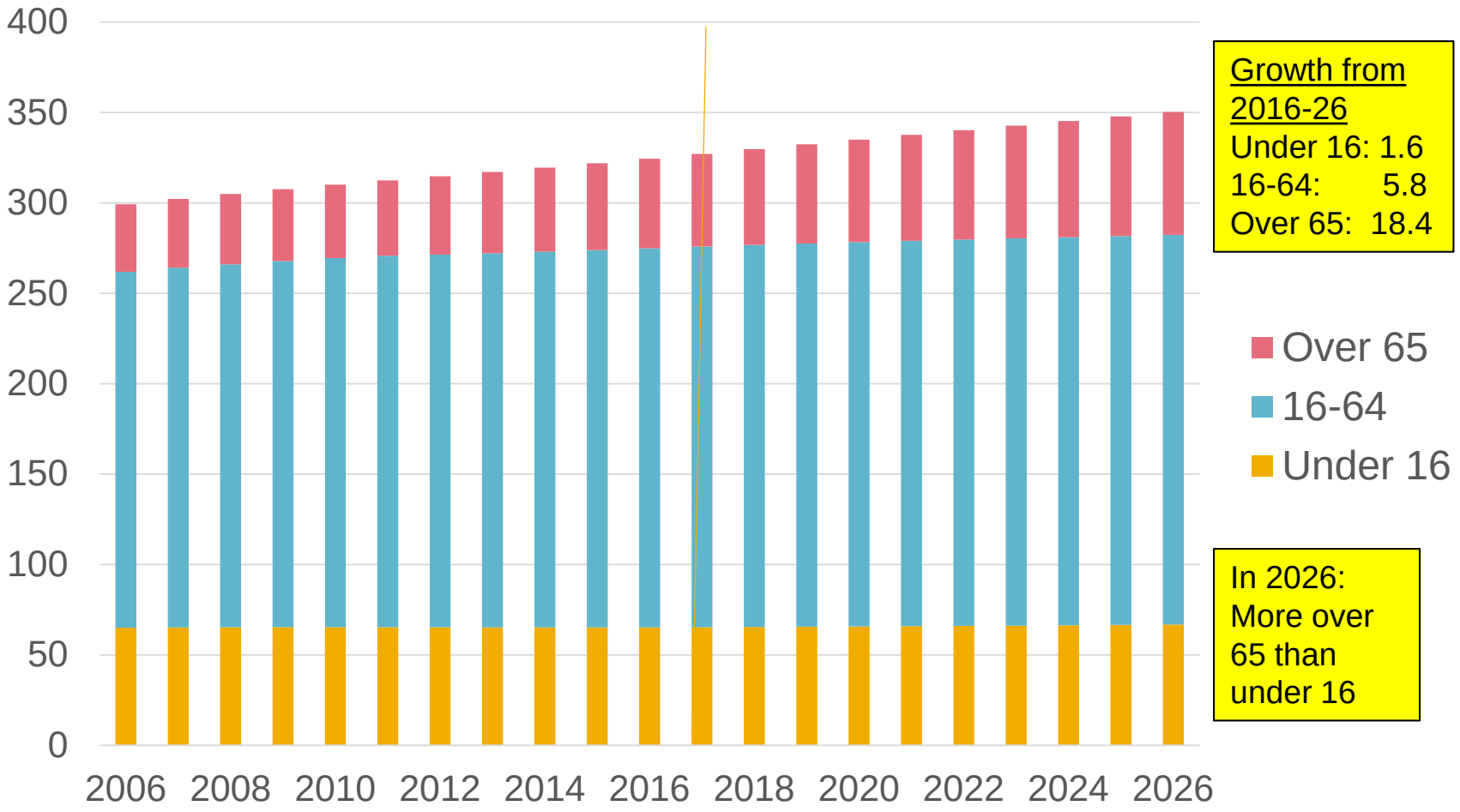
Interest rates

IHS Markit, January 2017



U.S. population

Million, IHS Markit, Jan. 2017



Growth from 2016-26
Under 16: 1.6
16-64: 5.8
Over 65: 18.4

In 2026: More over 65 than under 16

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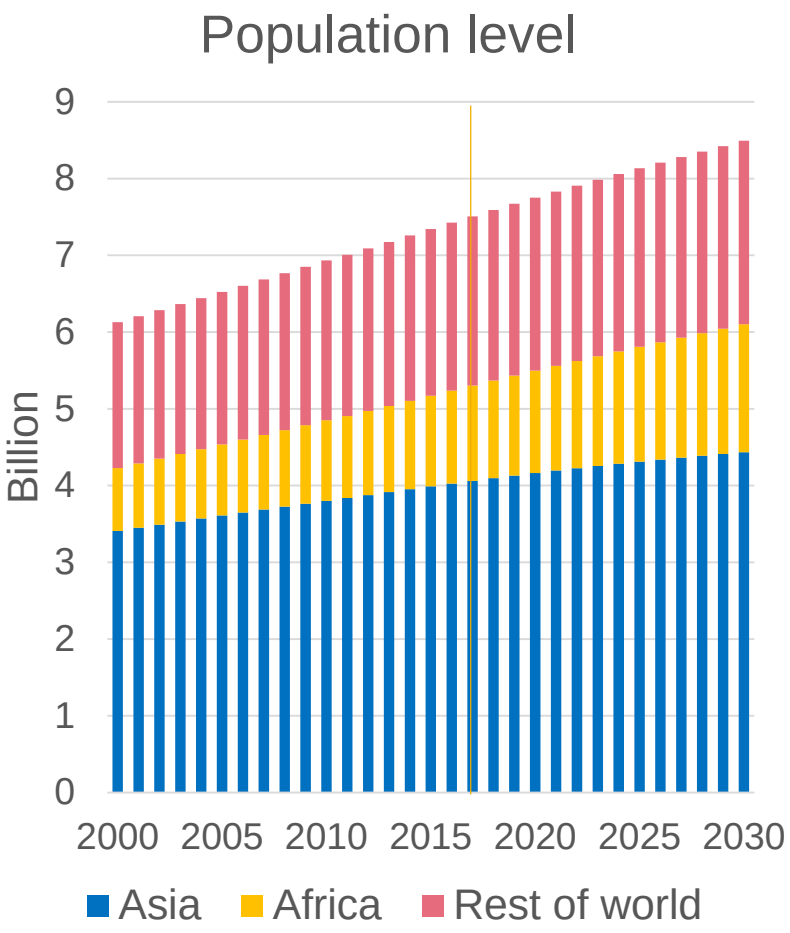
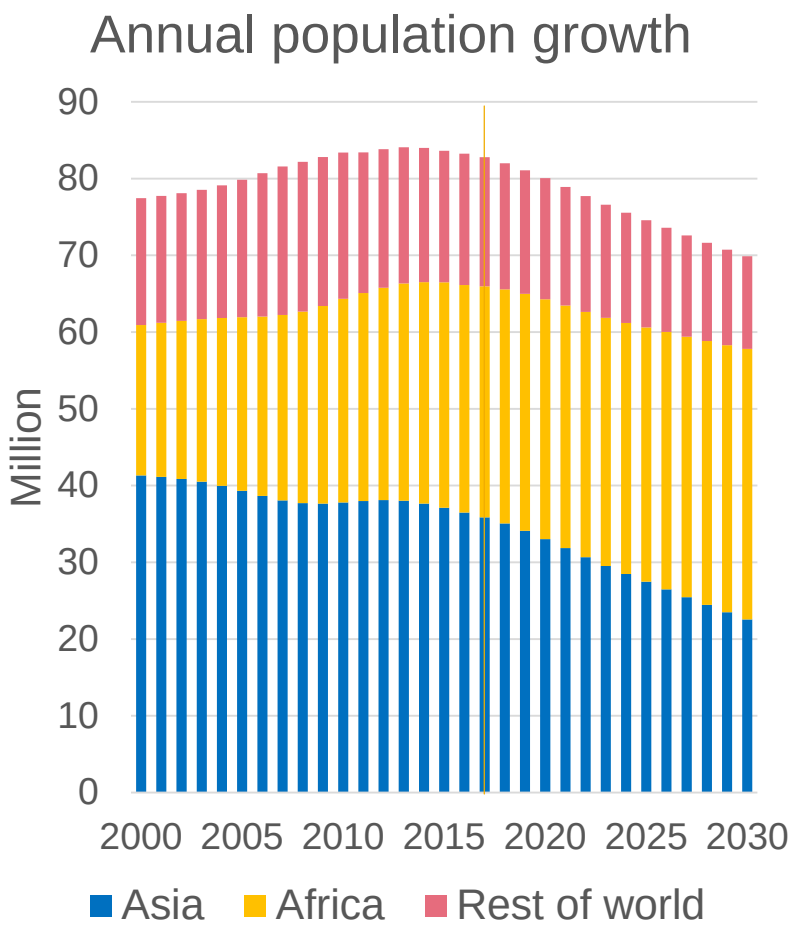
World population





Source: IHS Markit, December 2016

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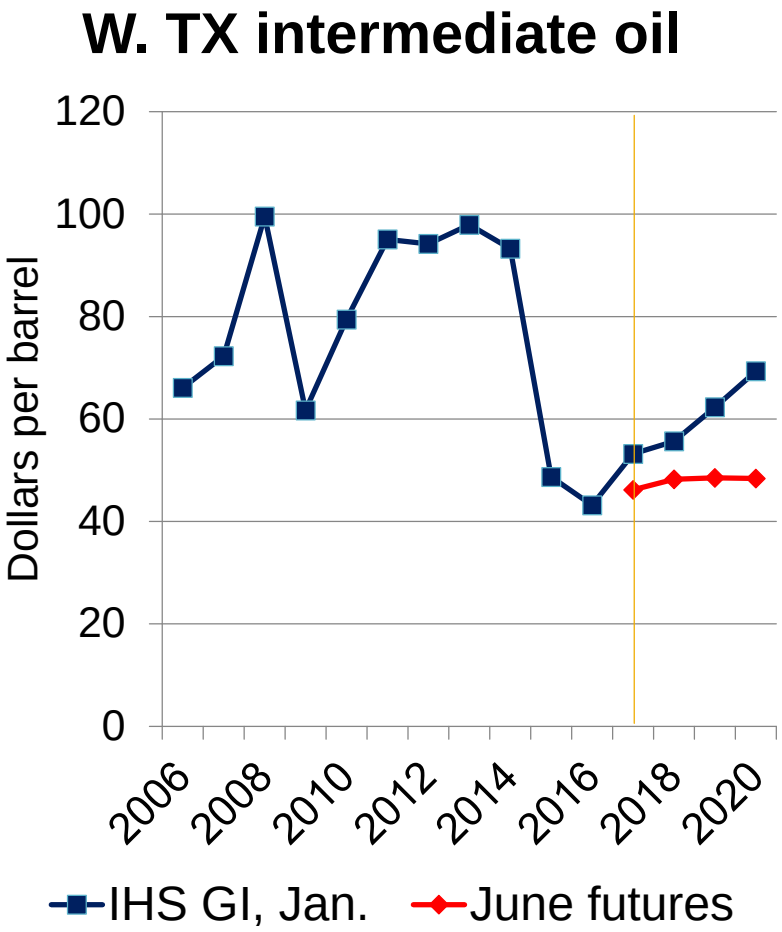
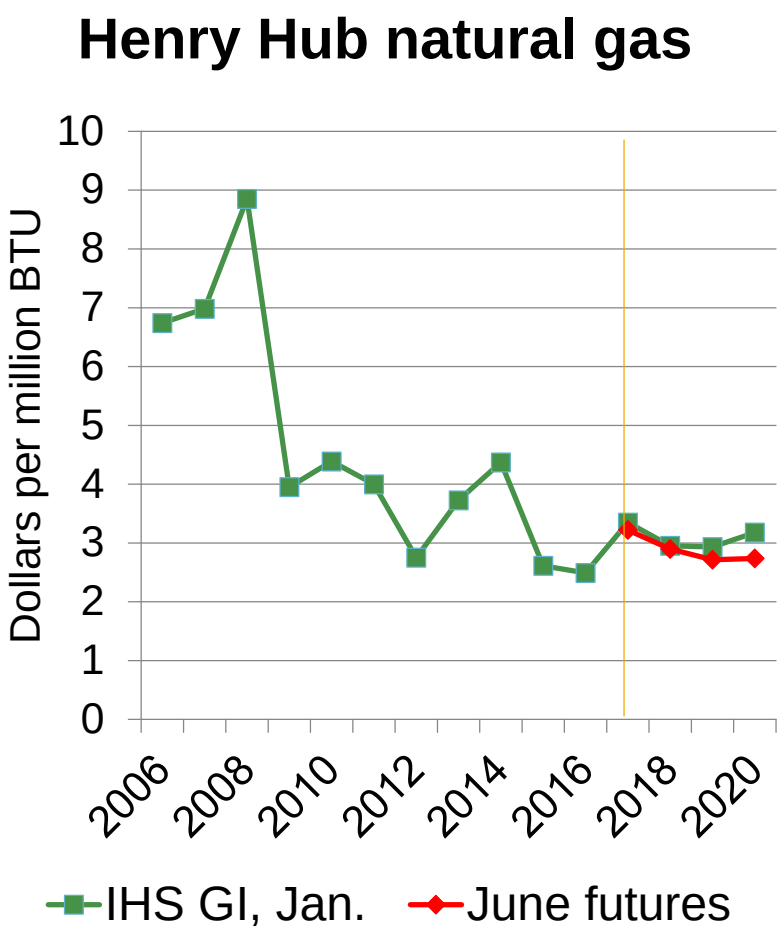
Energy prices





Source: IHS Markit, Jan. 2017; June WTI and natural gas futures, May 5, 2017

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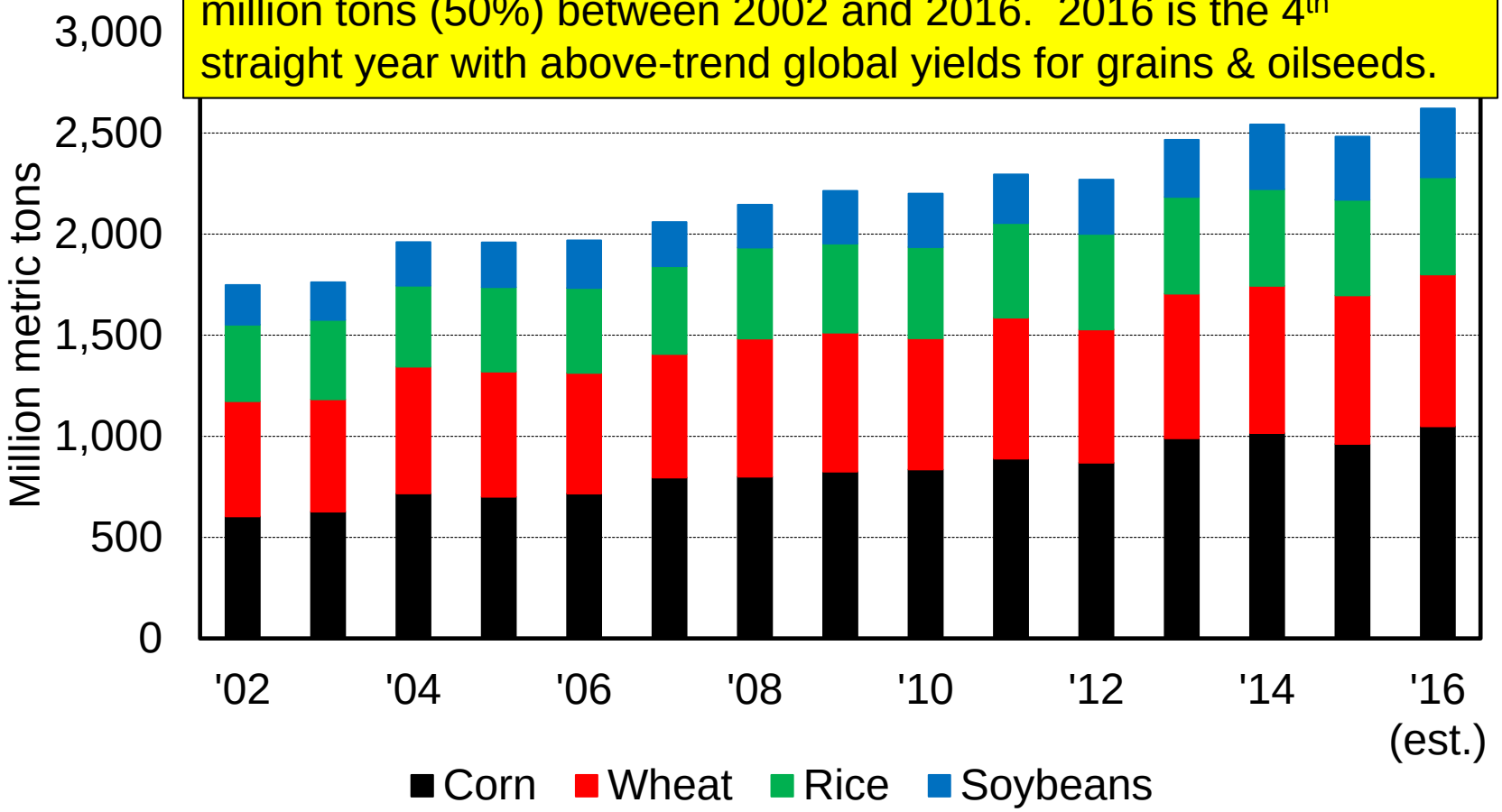
Policy assumptions

- The baseline assumes a continuation of current policies
  - Extend the 2014 farm bill when it expires in 2018
  - Keep current provisions, allow a new ARC/PLC election in 2019
  - Keep current biofuel policies including the RFS
  - Continue NAFTA & WTO
  - No TPP or TTIP
  - No new immigration restrictions
- We recognize some of the assumptions will not hold
  - We have and will look at alternative scenarios that consider policy alternatives
  - We can discuss some implications of policy options as we go along or in the final section of today's discussion

World production of four crops

World production of these four major crops increased by 873 million tons (50%) between 2002 and 2016. 2016 is the 4th straight year with above-trend global yields for grains & oilseeds.



Source: USDA PSD Online, March 2017

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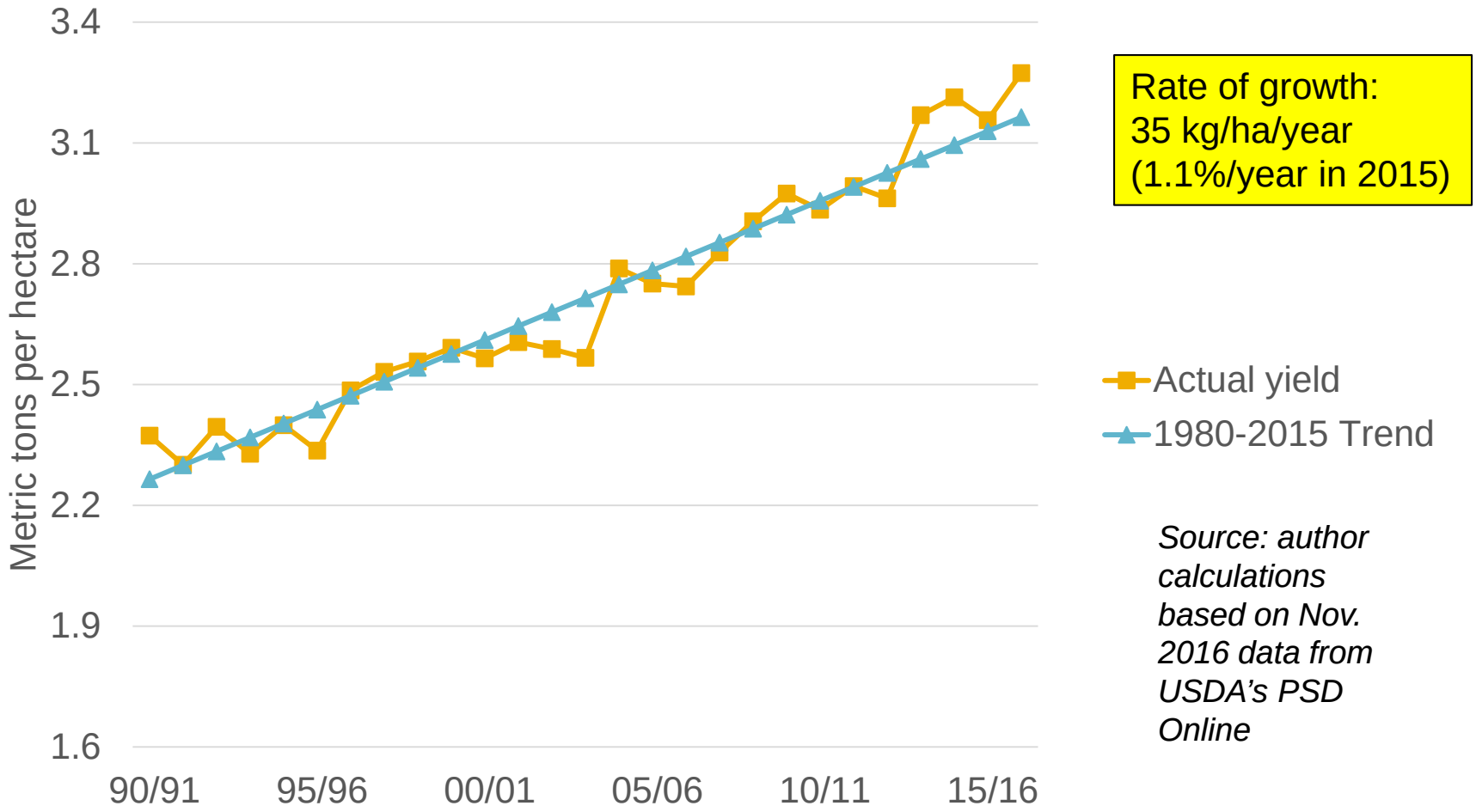
Global grain and oilseeds

Yields per hectare



Rate of growth:
35 kg/ha/year
(1.1%/year in 2015)

Source: author calculations based on Nov. 2016 data from USDA's PSD Online

Yields per hectare for an aggregate of 9 grains (corn, wheat, rice, sorghum, barley, oats, rye, millet and mixed grains) and 5 oilseeds (soybeans, rapeseed, sunflower seed, peanuts and cottonseed).

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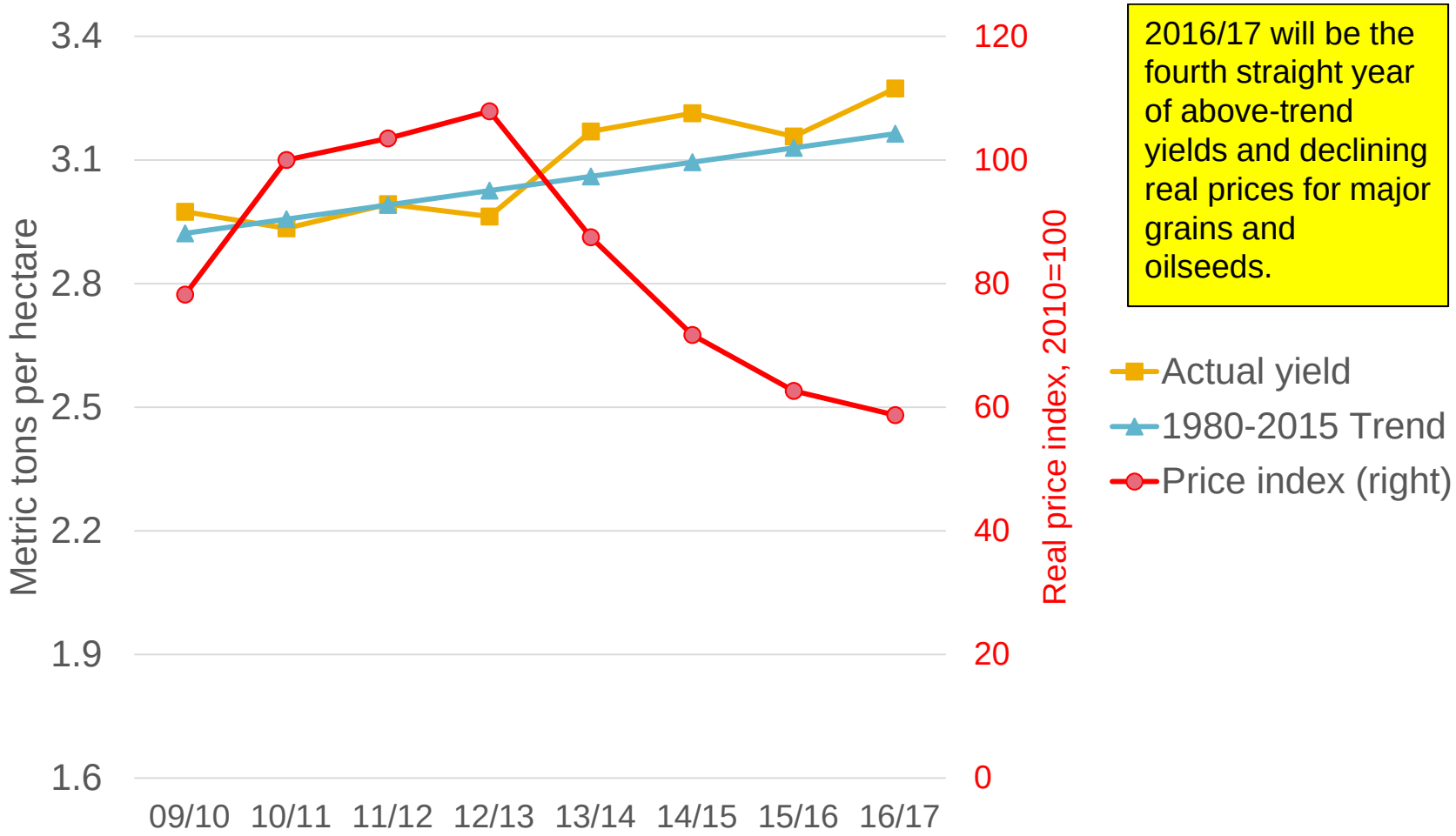
Global grain and oilseeds

Yields per hectare and index of prices



2016/17 will be the fourth straight year of above-trend yields and declining real prices for major grains and oilseeds.

Yields per hectare for an aggregate of 9 grains and 5 oilseeds. The price index is a simple average of real rice, wheat, corn and soybean price indices, 2010=100. Author calculations from Nov. 2016 data for quantities; 2016/17 price estimates are preliminary.

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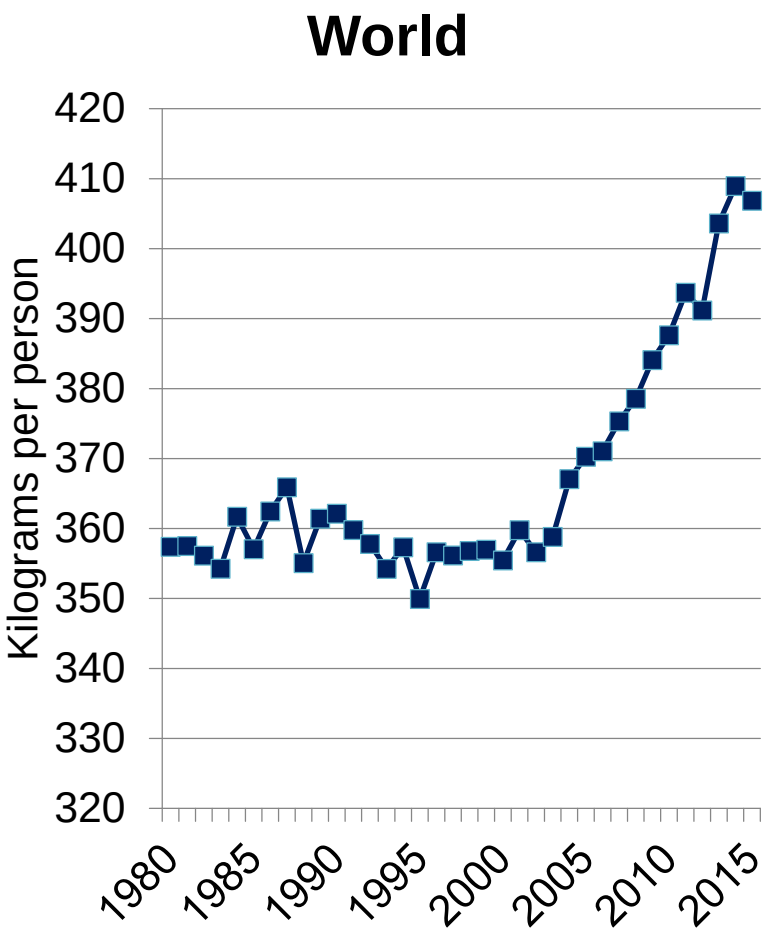
Per-capita use of grains and oilseeds



Source: Author calculations based on Nov. 2016 USDA PSD Online data for 9 grains and 5 oilseeds and U.S. Census Bureau population estimates

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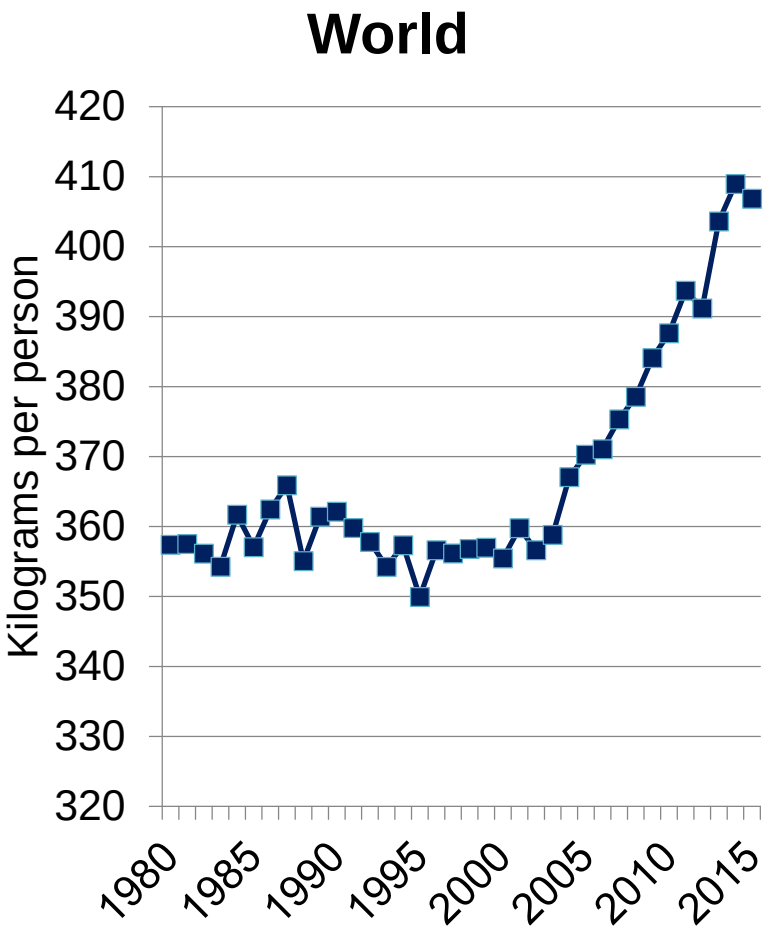
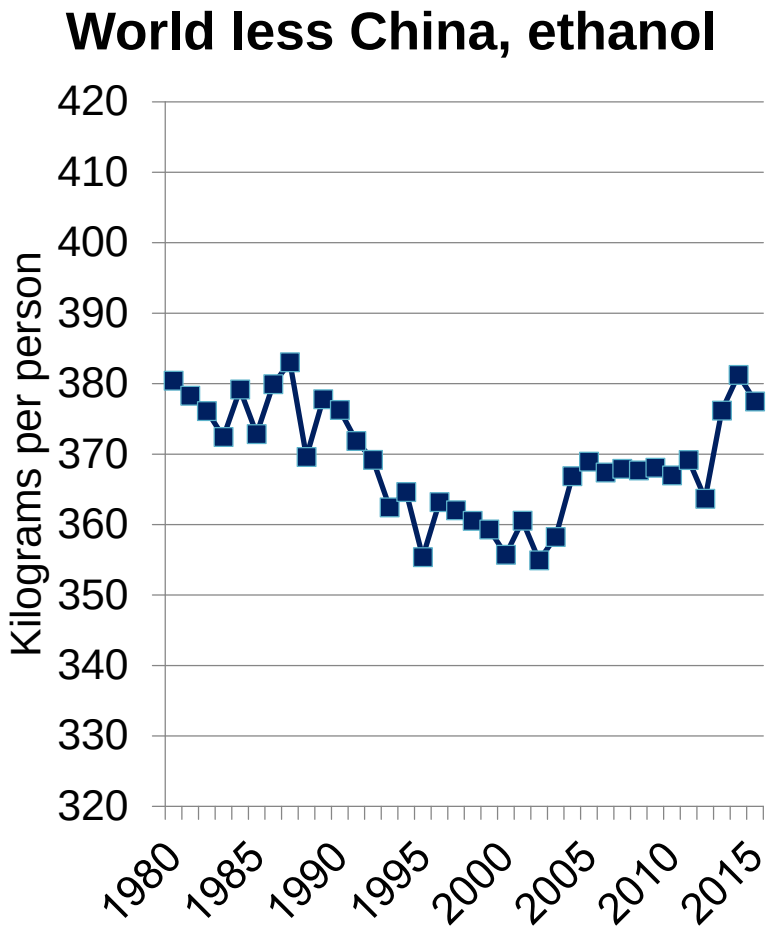
Per-capita use of grains and oilseeds





Source: Author calculations based on Nov. 2016 USDA PSD Online data for 9 grains and 5 oilseeds and U.S. Census Bureau population estimates

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China growth is slowing

	2005/06-2015/16	2016/17-2026/27
Real GDP growth rate	9.3%/yr.	5.9%/yr.
Annual population growth	7.0 million (0.52%)/yr.	2.8 million (0.22%)/yr.
Annual corn feed use growth	5.2 million metric tons/yr.	3.1 million metric tons/yr.
Annual corn net import growth	0.7 million metric tons/yr.	0.2 million metric tons/yr.
Annual soymeal use growth	3.5 million metric tons/yr.	1.9 million metric tons/yr.
Annual soybean net import growth	5.5 million metric tons/yr.	2.9 million metric tons/yr.

Source: Macroeconomic projections are from IHS Markit; other data is from the International Crops Baseline Briefing Book produced by University of Nevada, Reno

World grain and oilseed use

	1980-2015	2015-2050
Increase in world population	63%	29%
Increase in grain and oilseed use per person	14%	*14%* (just suppose)
Increase in total grain and oilseed use	86%	*47%* (implied by above figures)

Notes: Includes 9 grains and 5 oilseeds, based on USDA historical data and author projections. Population estimates from U.S. Census Bureau.

- Over the last 35 years, population growth accounted for most of the growth in global use of grains and oilseeds
- With slowing world population growth, future growth in use is likely to slow even if rising incomes cause dietary changes

Big picture summary

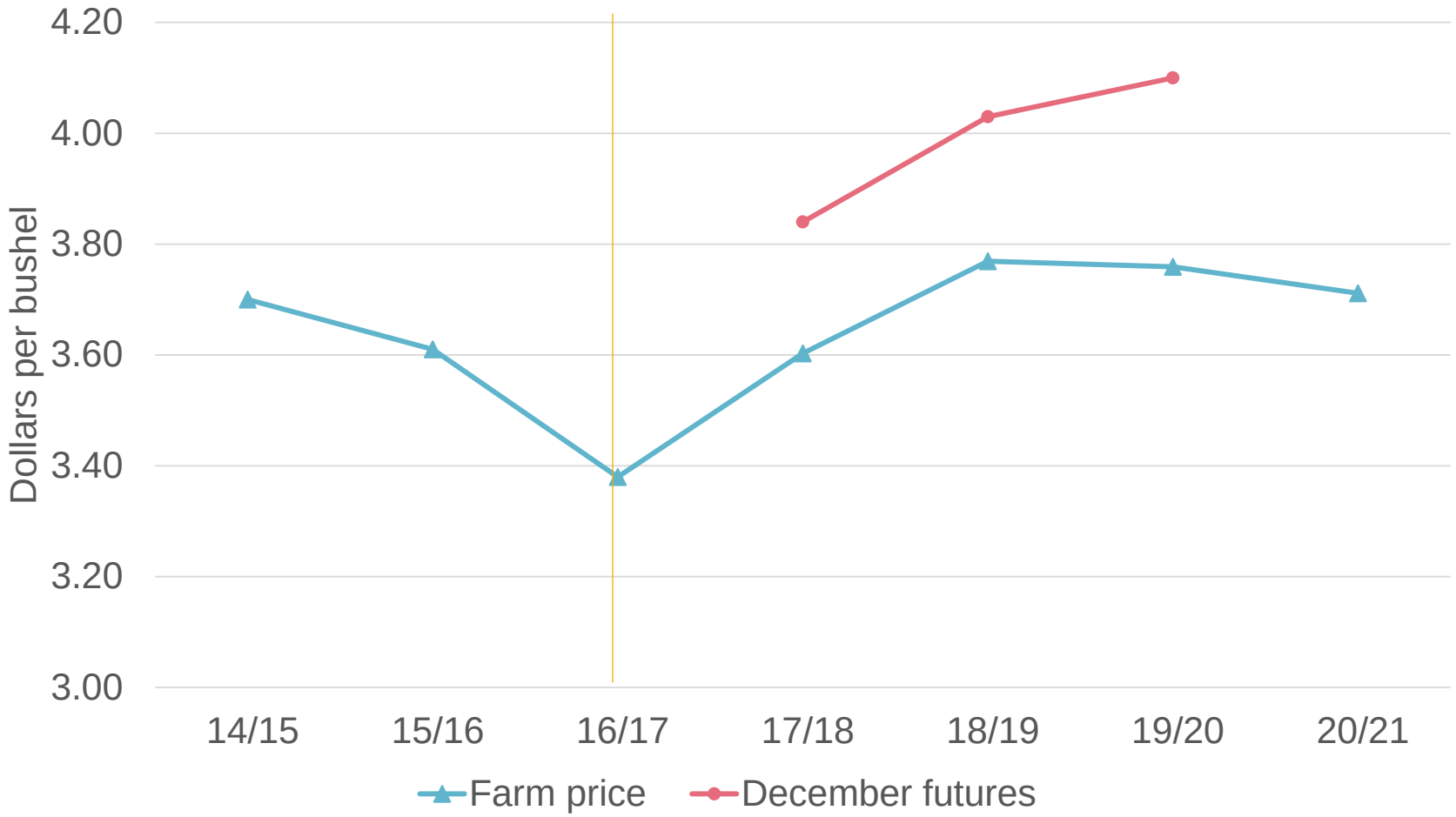
- Global grain and oilseed area has increased and we've now had 4 straight years of above-trend yields
- Population growth is slowing
- China and biofuels accounted for all the growth in per-capita consumption since 1980
- Biofuel growth has slowed and there are questions about future Chinese growth
- What will be the engine of future demand growth?

U.S. corn supply and use

	2015/16 (USDA May)	2016/17 (USDA May)	2017/18 (FAPRI March)	2017/18 (USDA, May)
Area planted (mil. acres)	88.0	94.0	92.1	90.0
Yield (bu./harvested acre)	168.4	174.6	168.6	170.7
Production (mil. bu.)	13,602	15,148	14,177	14,065
Feed and residual use (mil. bu.)	5,123	5,500	5,420	5,425
Ethanol and coproduct use	5,224	5,450	5,524	5,500
Other domestic use	1,419	1,470	1,438	1,500
Exports	1,898	2,225	2,023	1,875
Ending stocks	1,737	2,295	2,116	2,110
Marketing yr. avg. price ($/bu.)	3.61	3.25-3.55	3.60	3.00-3.80

Sources: USDA WASDE, May 2017 and FAPRI-MU baseline, March 2017, page 22.

Corn: farm and futures prices



Sources: FAPRI-MU baseline, Mar. 2017; Dec. CME futures contracts, May 15, 2017.

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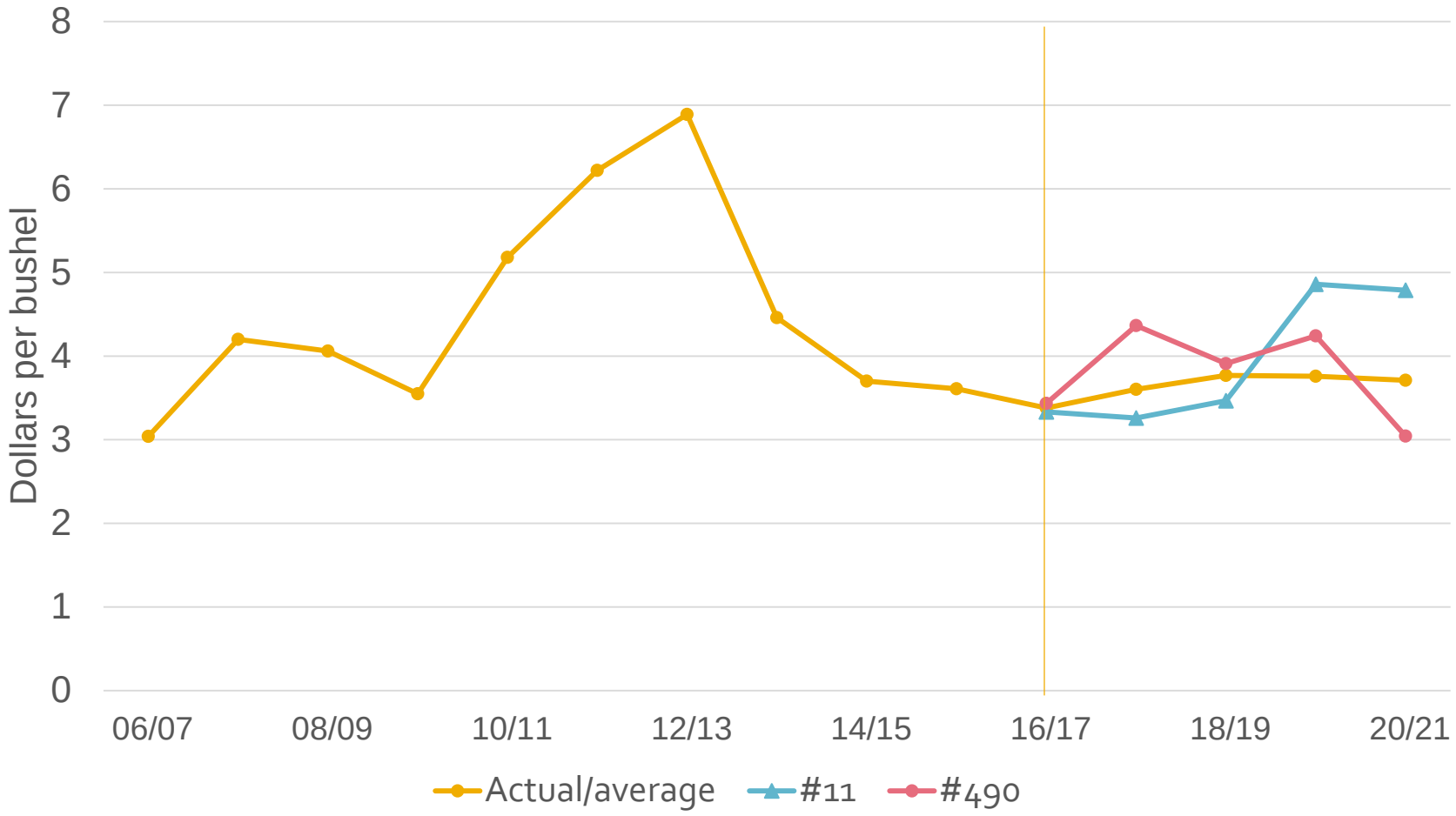
Corn: farm prices



Source: FAPRI-MU stochastic baseline, March 2017

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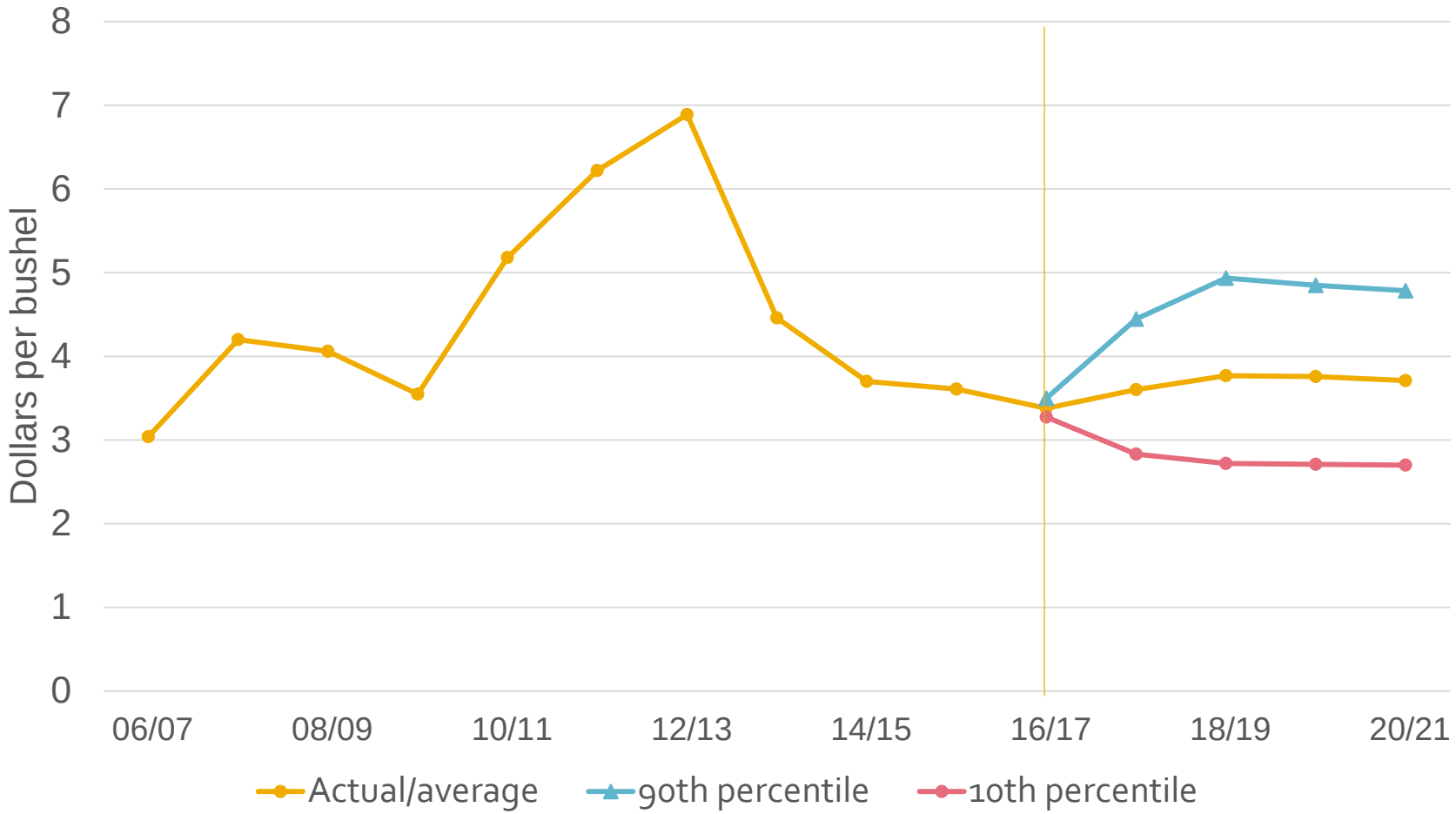
Corn: farm prices



Source: FAPRI-MU stochastic baseline, March 2017

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U.S. soybean supply and use

	2015/16 (USDA May)	2016/17 (USDA May)	2017/18 (FAPRI March)	2017/18 (USDA May)
Area planted (mil. acres)	82.7	83.4	87.1	89.5
Yield (bu./harvested acre)	48.0	52.1	46.8	48.0
Production (mil. bu.)	3,926	4,307	4,036	4,255
Crush (mil. bu.)	1,886	1,925	1,936	1,950
Other domestic use	122	118	120	135
Exports	1,936	2,050	2,044	2,150
Ending stocks	197	435	377	480
Marketing yr. avg. price ($/bu.)	8.95	9.55	9.57	8.30-10.30

Sources: USDA WASDE report, May 2017 and FAPRI-MU baseline, March 2017, page 34.

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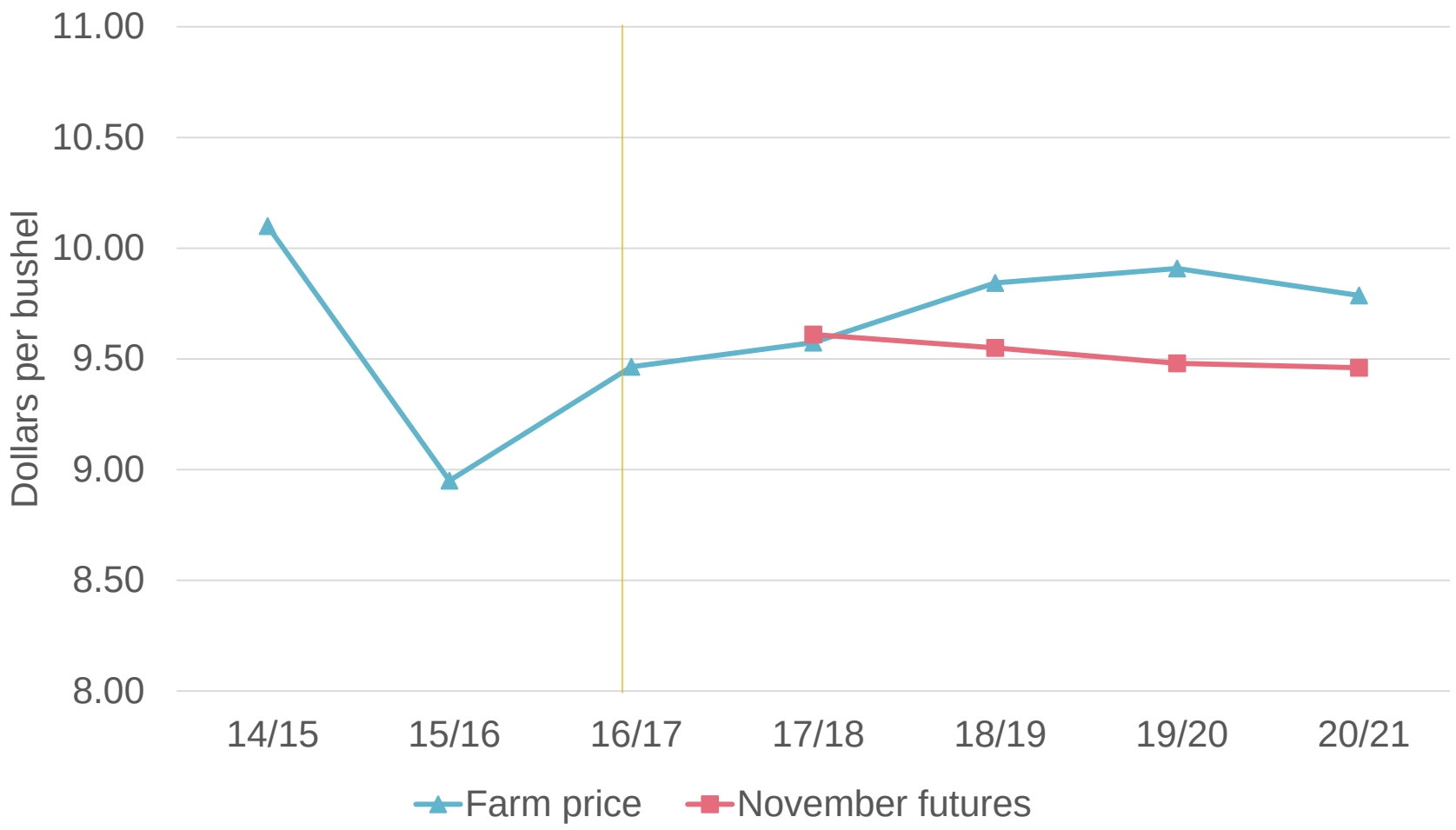
Soybeans: farm and futures prices



Sources: FAPRI-MU baseline, Mar. 2017; CME Nov. futures contracts, May 15, 2017.

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Crop insurance prices

Dollars per bushel

	2016 planting price	2016 harvest price	2017 planting price	Futures, May. 15, 2017
Corn	$3.86	$3.49	$3.96	$3.85
Soybeans	$8.85	$9.75	$10.19	$9.61
Soybean/corn ratio	2.29	2.79	2.57	2.50

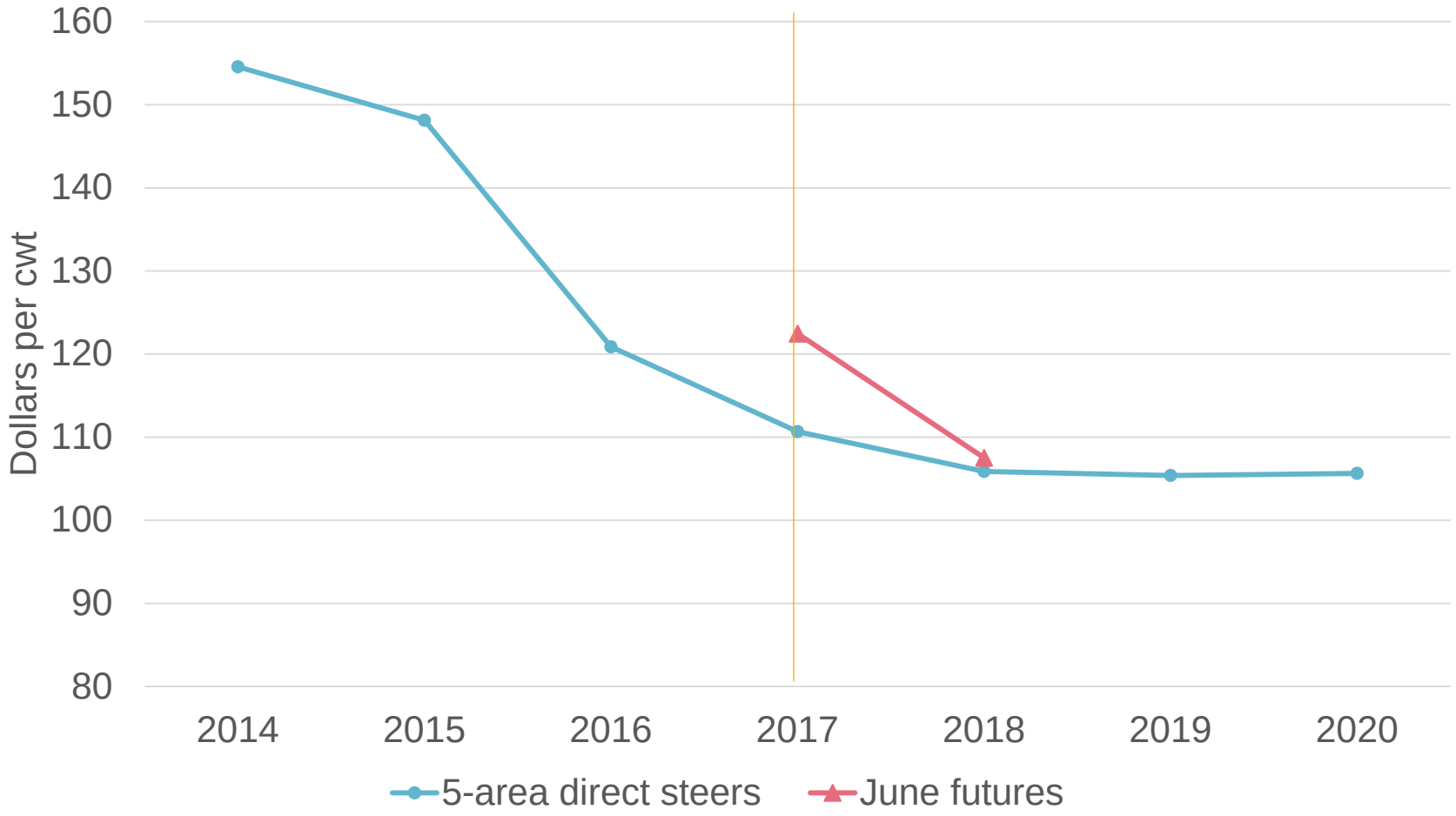
Sources: Risk Management Agency, Chicago Mercantile Exchange

U.S. beef supply and use

	2016 (USDA May)	2017 (USDA May)	2018 (USDA, May)
Production (bil. lbs.)	25.29	26.38	26.98
Imports	3.02	2.76	2.83
Domestic disappearance	25.68	26.44	27.02
Exports	2.55	2.81	2.84
Ending stocks	0.76	0.65	0.60
5-area direct steers ($/cwt)	120.86	120-125	113-123

Sources: USDA WASDE, May 2017.

Direct steers and futures prices



Sources: AMAP baseline, March 2017; June futures contracts, May 15, 2017.

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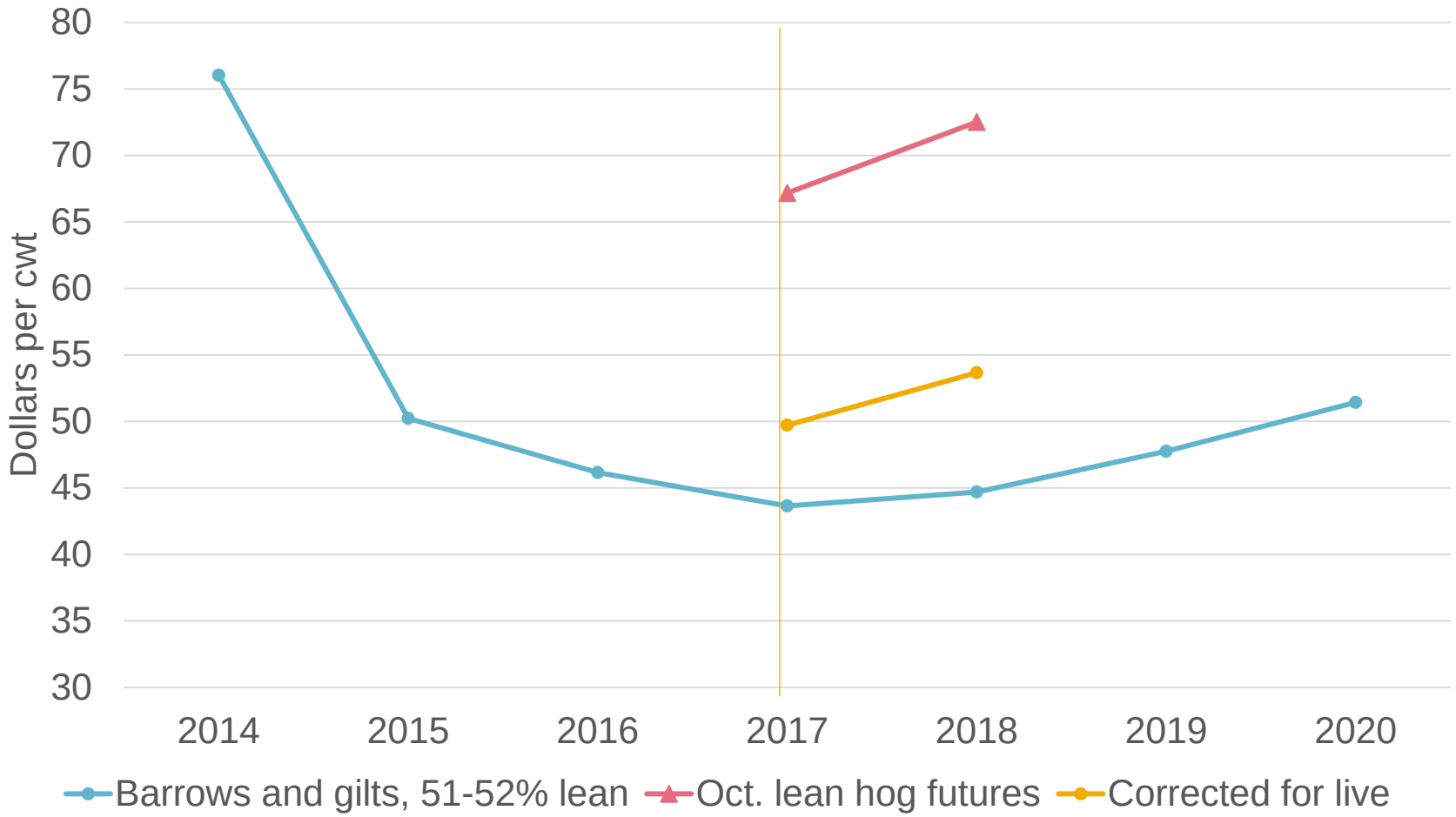
U.S. pork supply and use

	2016 (USDA May)	2017 (USDA May)	2018 (USDA May)
Production (bil. lbs.)	24.96	26.07	26.93
Imports	1.09	1.04	0.94
Domestic disappearance	20.90	21.23	21.75
Exports	5.23	5.75	5.97
Ending stocks	0.51	0.64	0.79
Barrows & gilts, 51-52% lean ($/cwt)	46.16	44-46	42-46

Sources: USDA WASDE, May 2017.

Hog prices



Sources: AMAP baseline, Mar. 2017; Oct. futures contracts, May 15, 2017.

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U.S. broiler supply and use

	2016 (USDA May)	2017 (USDA May)	2018 (USDA May)
Production (bil. lbs.)	40.26	41.04	41.82
Domestic disappearance	33.80	34.23	34.92
Exports	6.65	6.98	7.03
Ending stocks	0.78	0.75	0.75
Wholesale average (cents/lb.)	84.3	87-91	85-92

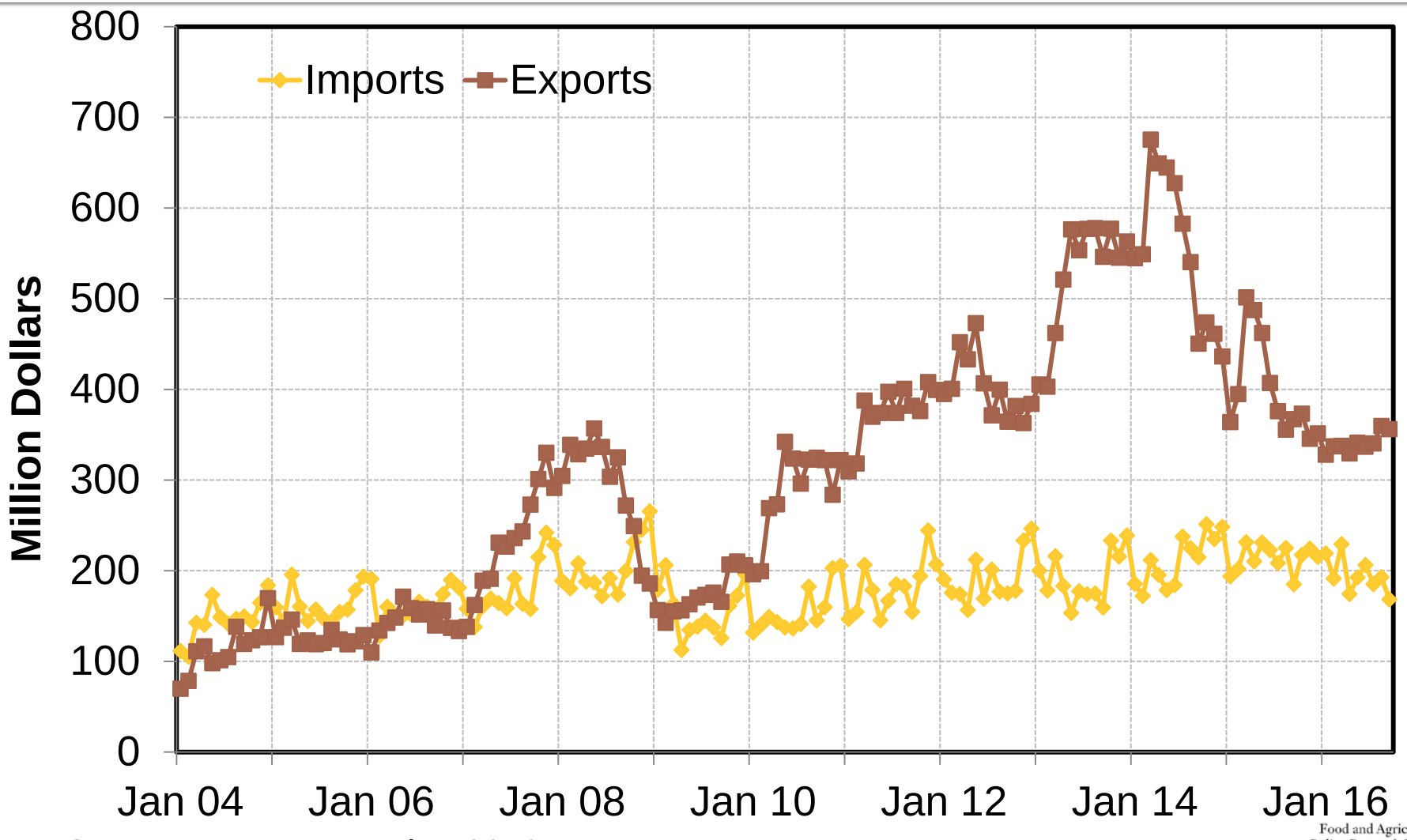
Sources: USDA WASDE, May 2017.

U.S. turkey and egg prices

	2016 (USDA May)	2017 (USDA May)	2018 (USDA May)
Turkey hens, wholesale, cents/lb.	117.1	102-106	104-112
Grade A large eggs, NY, cents/dozen	85.7	83-87	87-94

Sources: USDA WASDE, May 2017.

Value of U.S. dairy trade



Source: AMAP, November 2016

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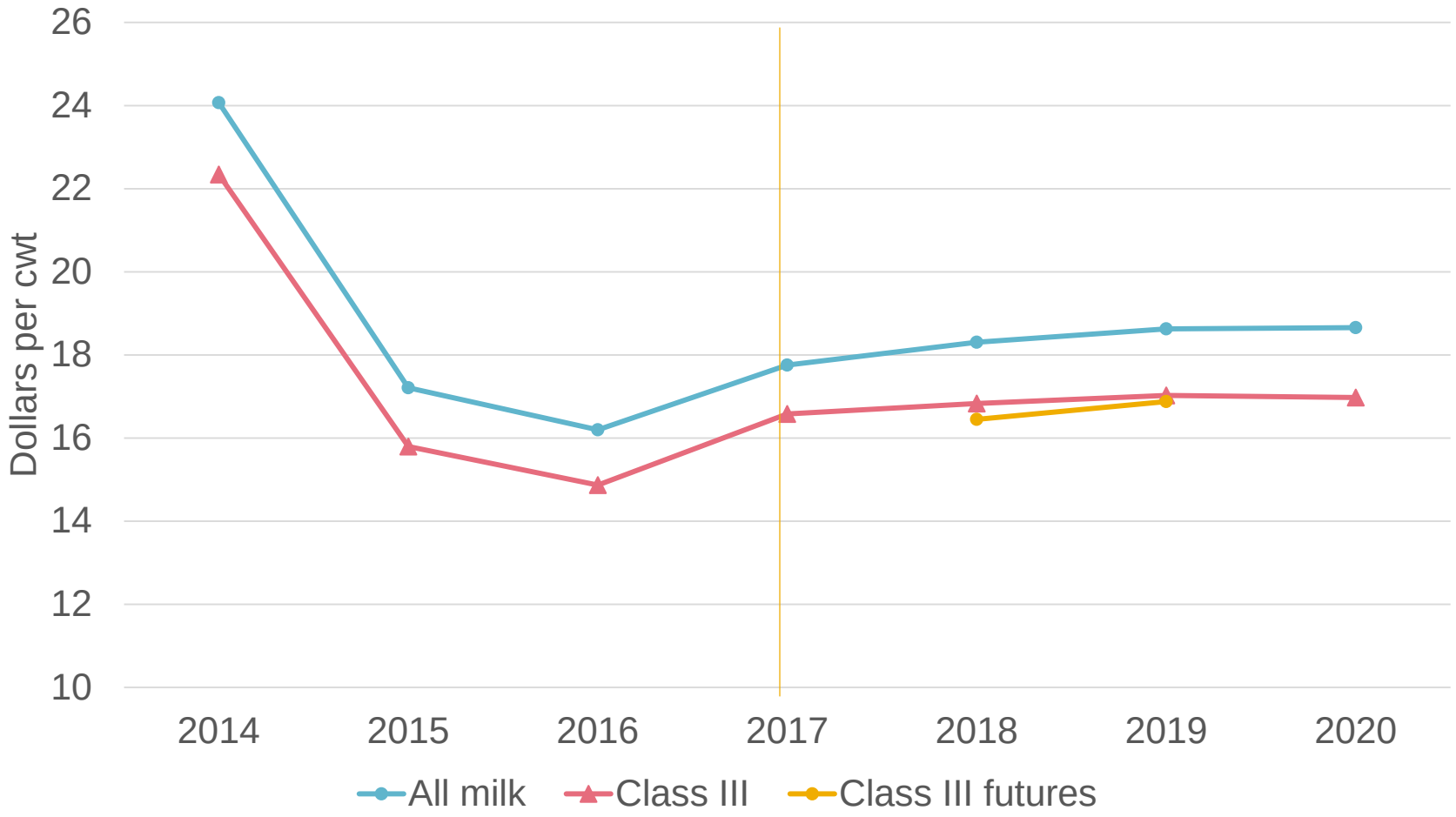
U.S. milk supply and use

	2016 (USDA May)	2017 (USDA May)	2018 (USDA May
Production (bil. lbs.)	212.4	216.9	222.0
Exports			
Fat basis	8.9	8.5	8.7
Skim solids basis	38.9	40.5	41.1
All milk price ($/cwt)	16.24	17.35-17.85	17.55-18.55

Sources: USDA WASDE, May 2017.

Milk prices



Source: AMAP baseline, Mar. 2017; April futures contracts, May 15, 2017.

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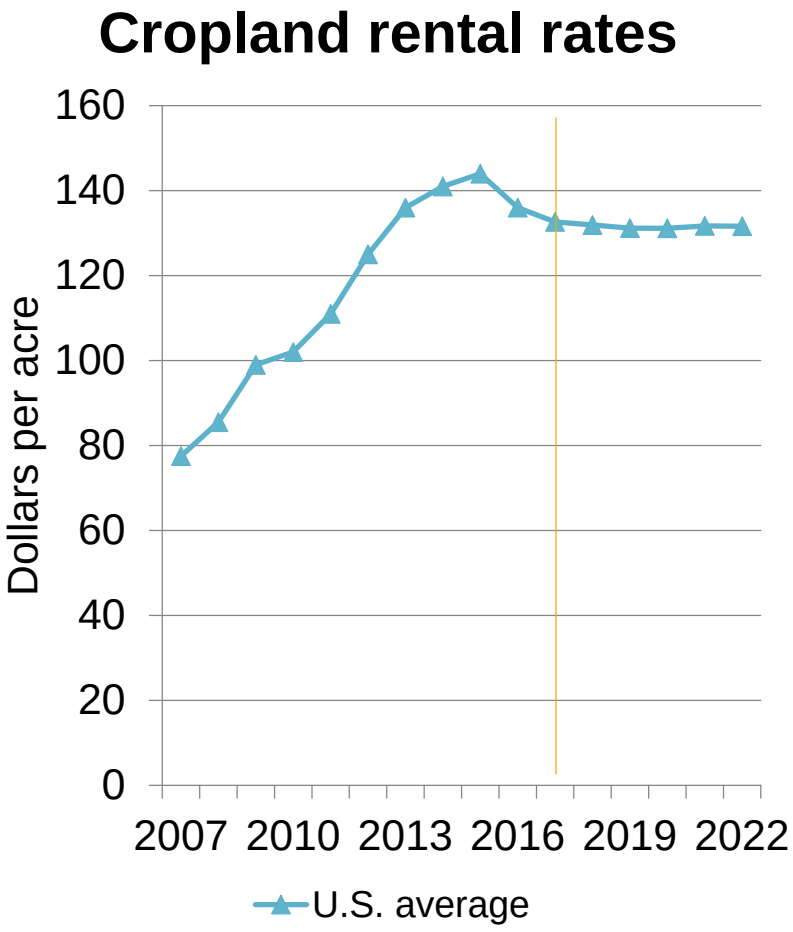
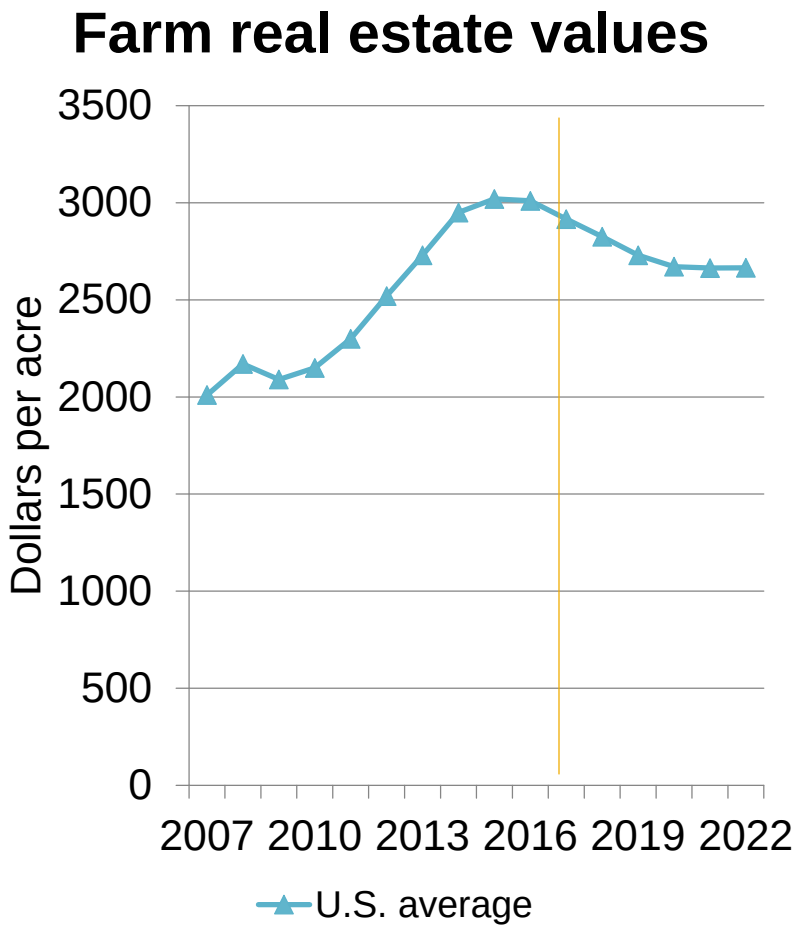
Farm income and balance sheet

- It's not the 1980s, but…

U.S. cropland rental rates and farm real estate values





Source: FAPRI-MU baseline update, Mar. 2017 (history from NASS)

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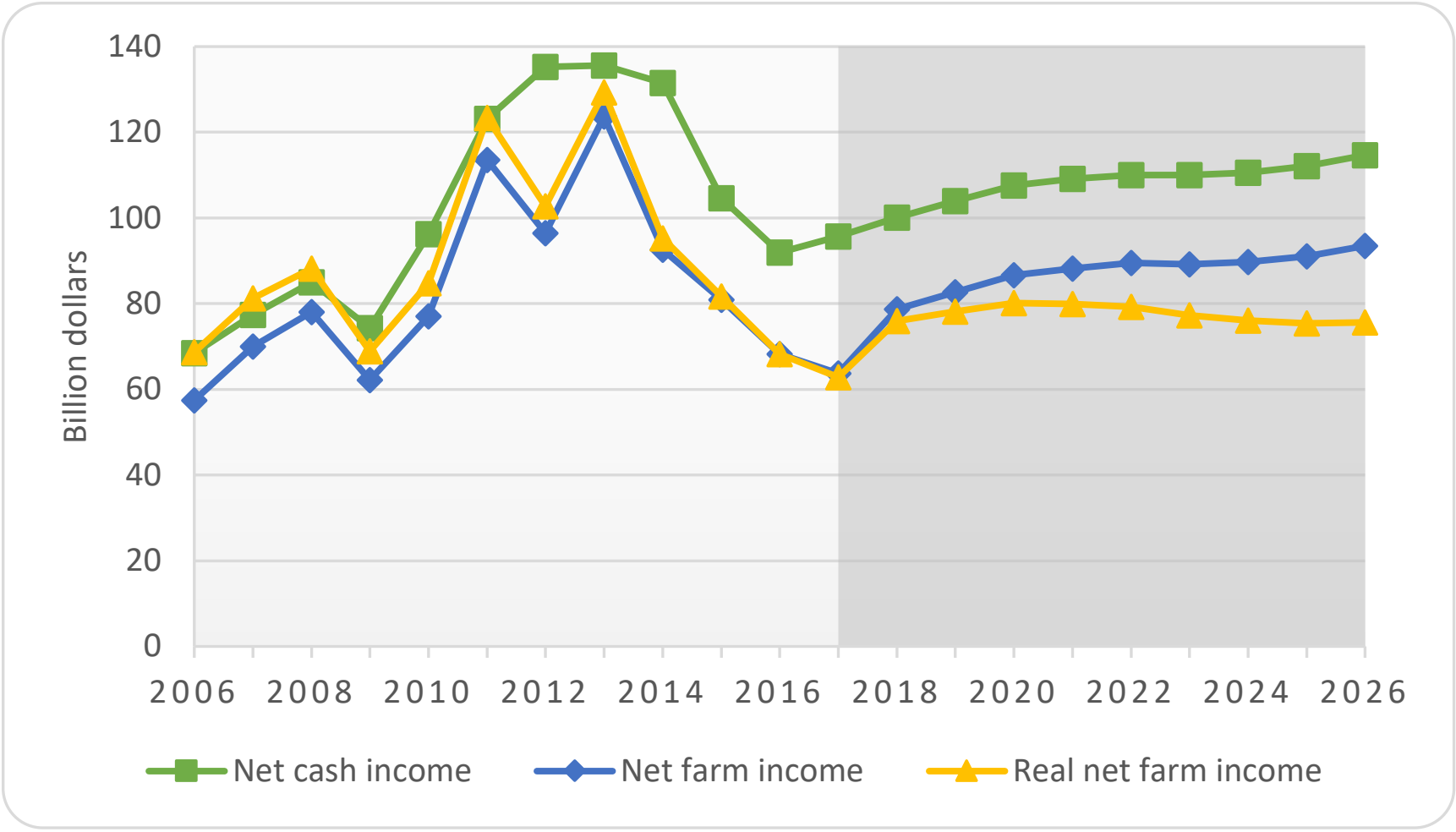
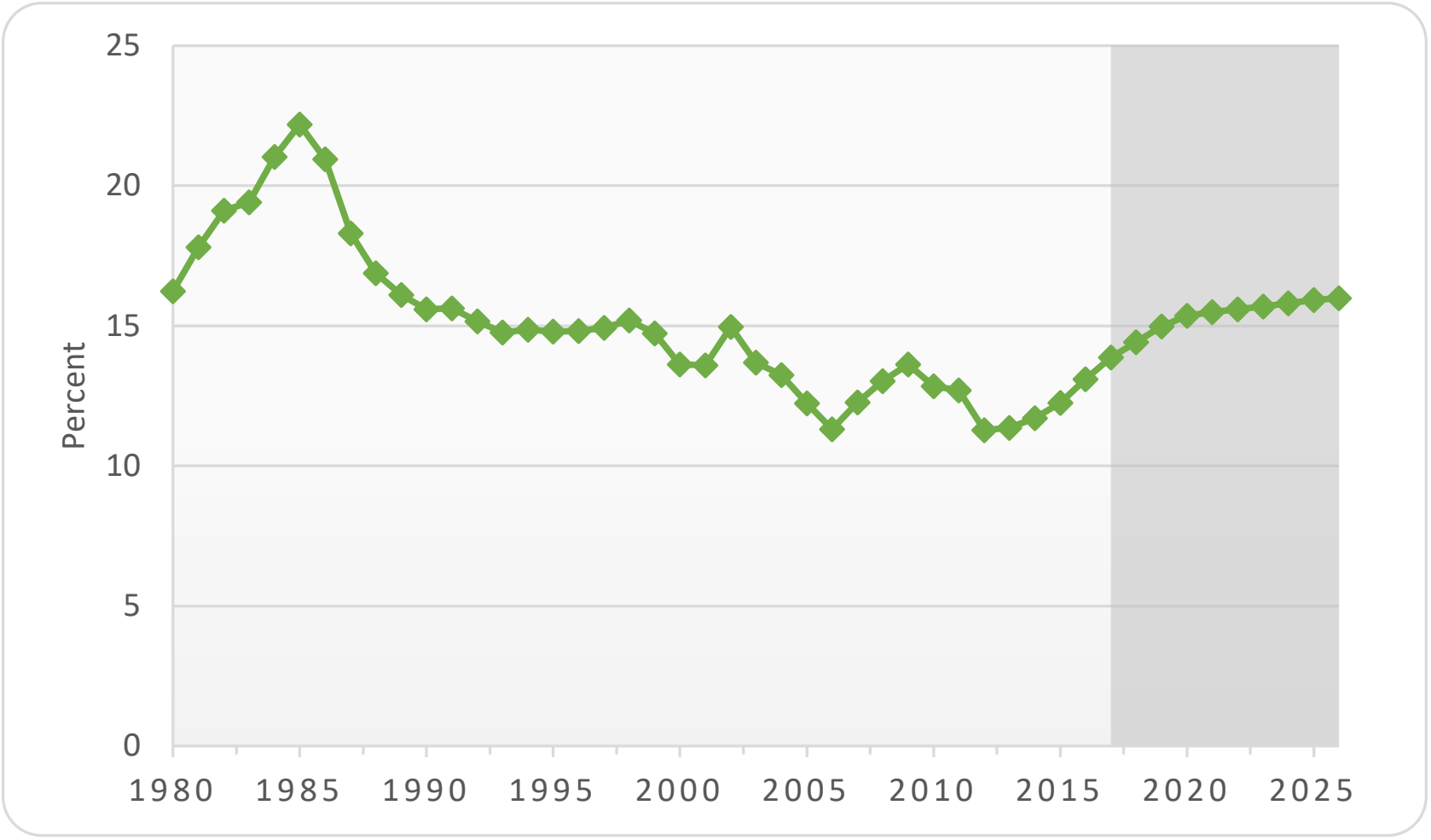
Farm income measures stay far below peaks



Source: page 7 of 2017 U.S. Baseline Briefing Book

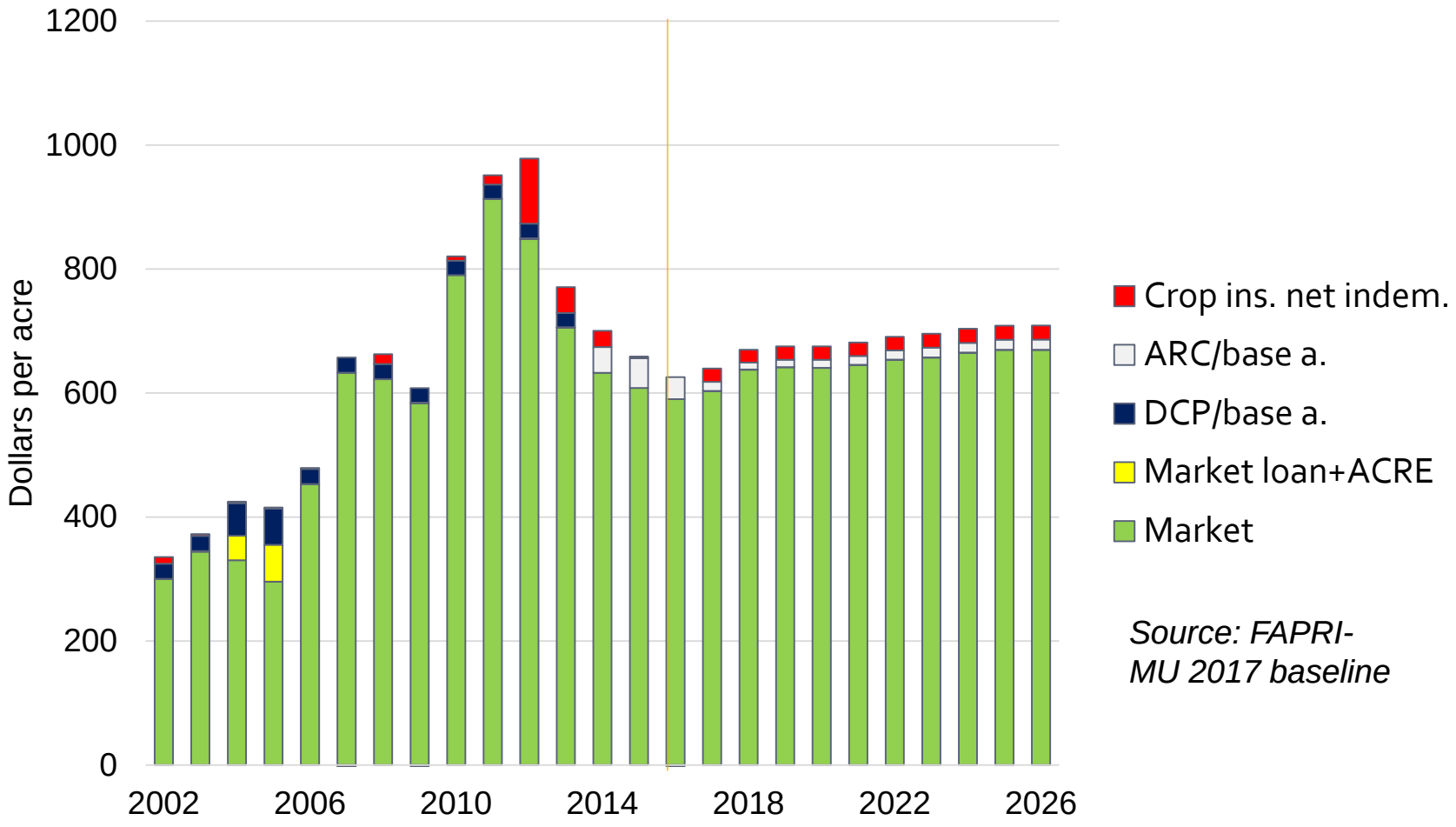
Debt-to-asset ratio rises, but below 1980s record



Source: page 7 of 2017 U.S. Baseline Briefing Book

Corn market receipts and payments

National average for ARC participants, crop year



Source: FAPRI-MU 2017 baseline

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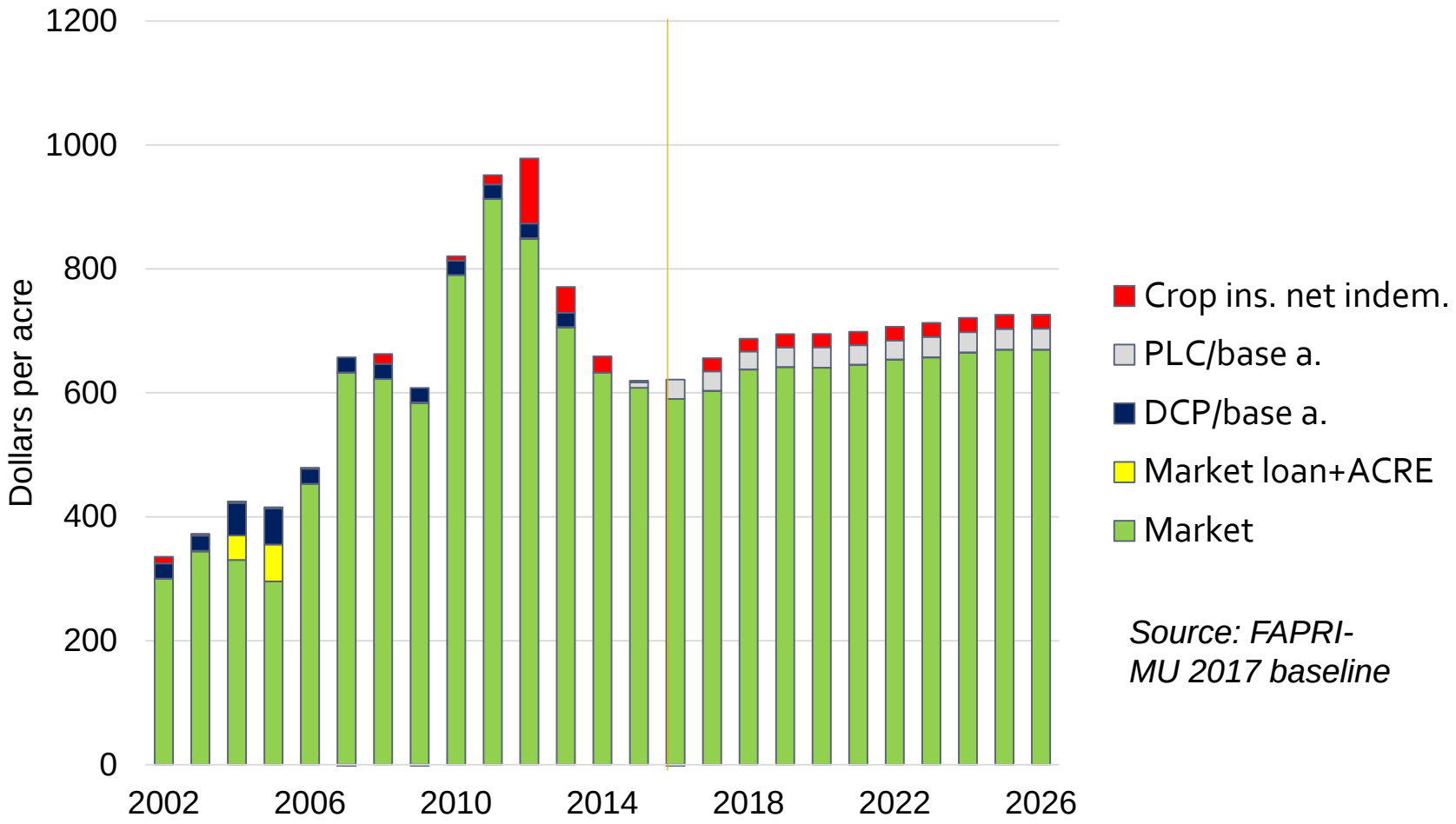
Corn market receipts and payments

National average for PLC participants, crop year



Source: FAPRI-MU 2017 baseline

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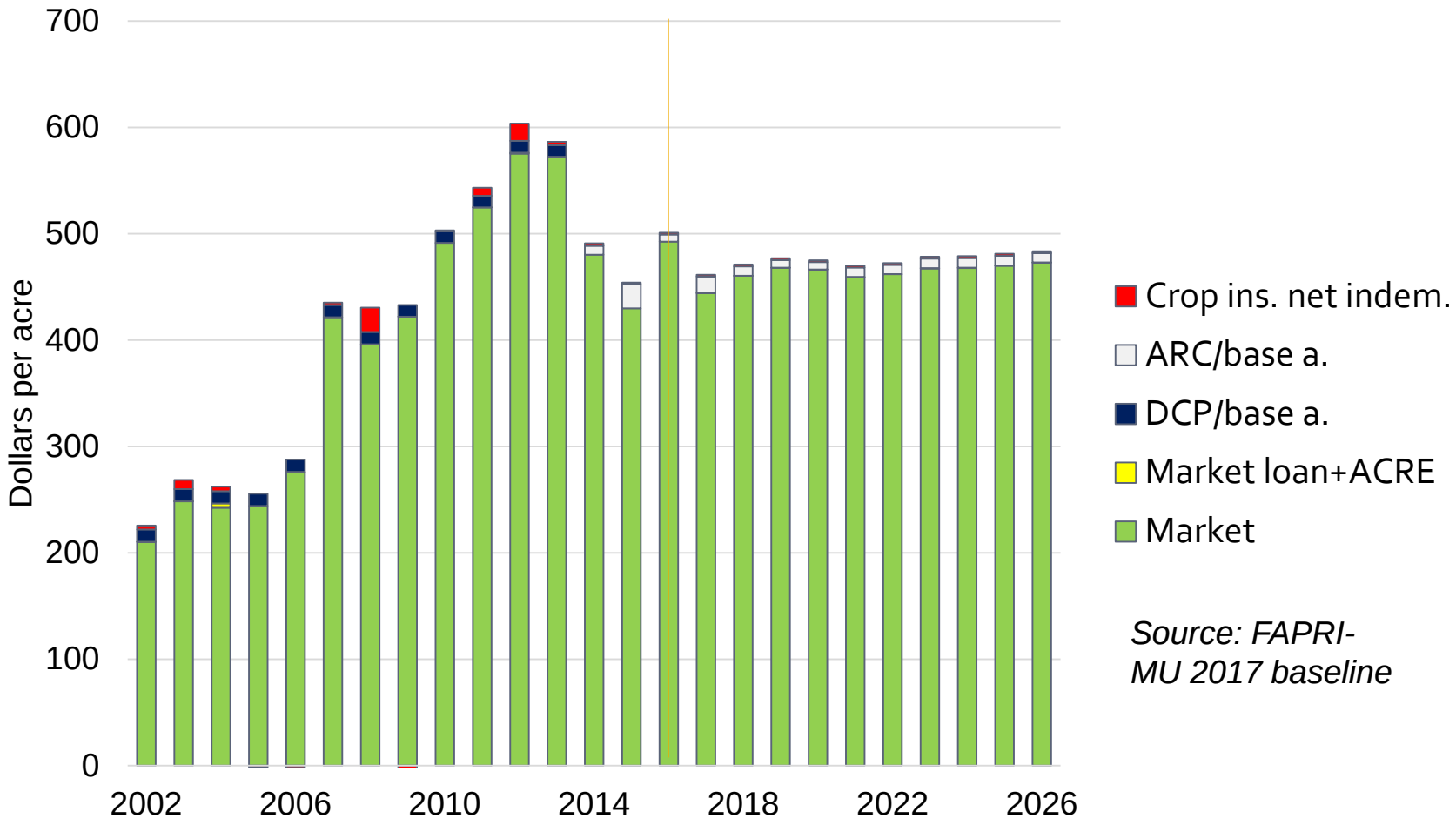
Soybean market receipts and payments

National average for ARC participants, crop year



Source: FAPRI-MU 2017 baseline

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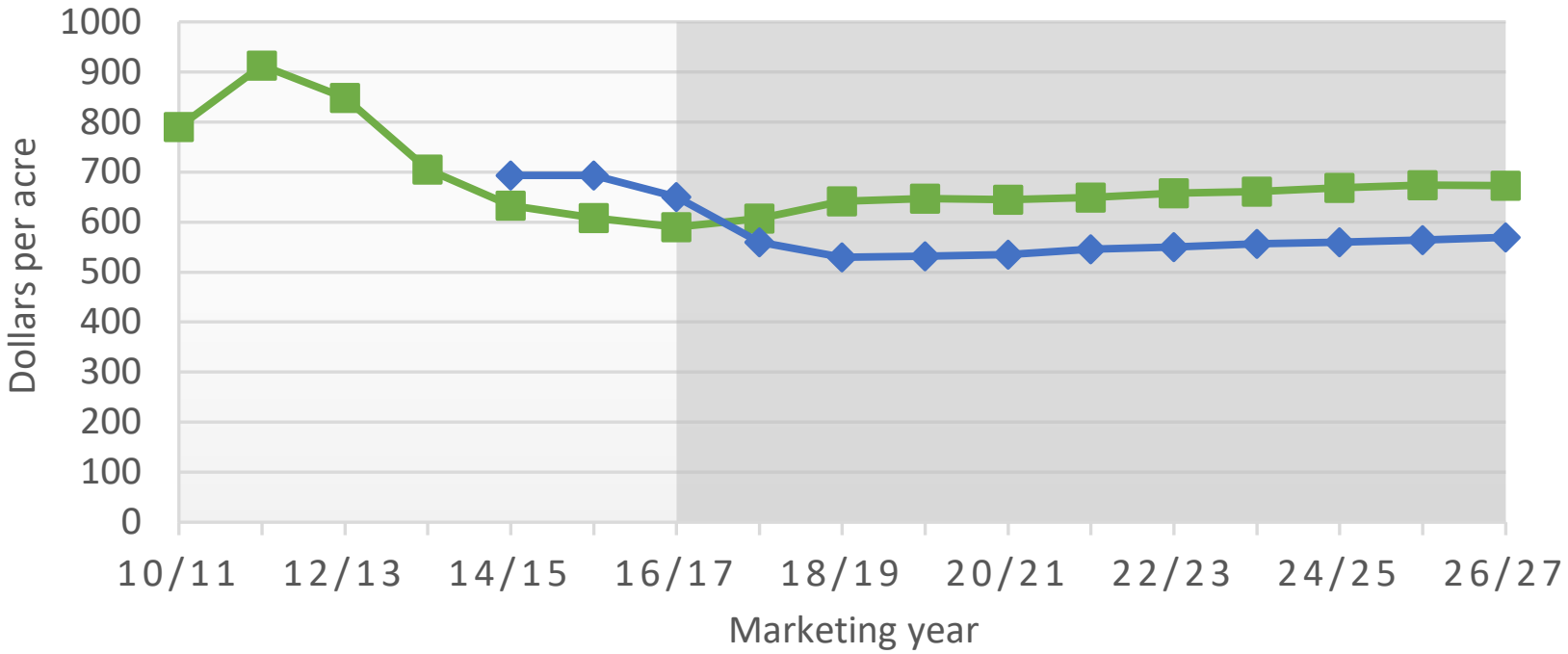
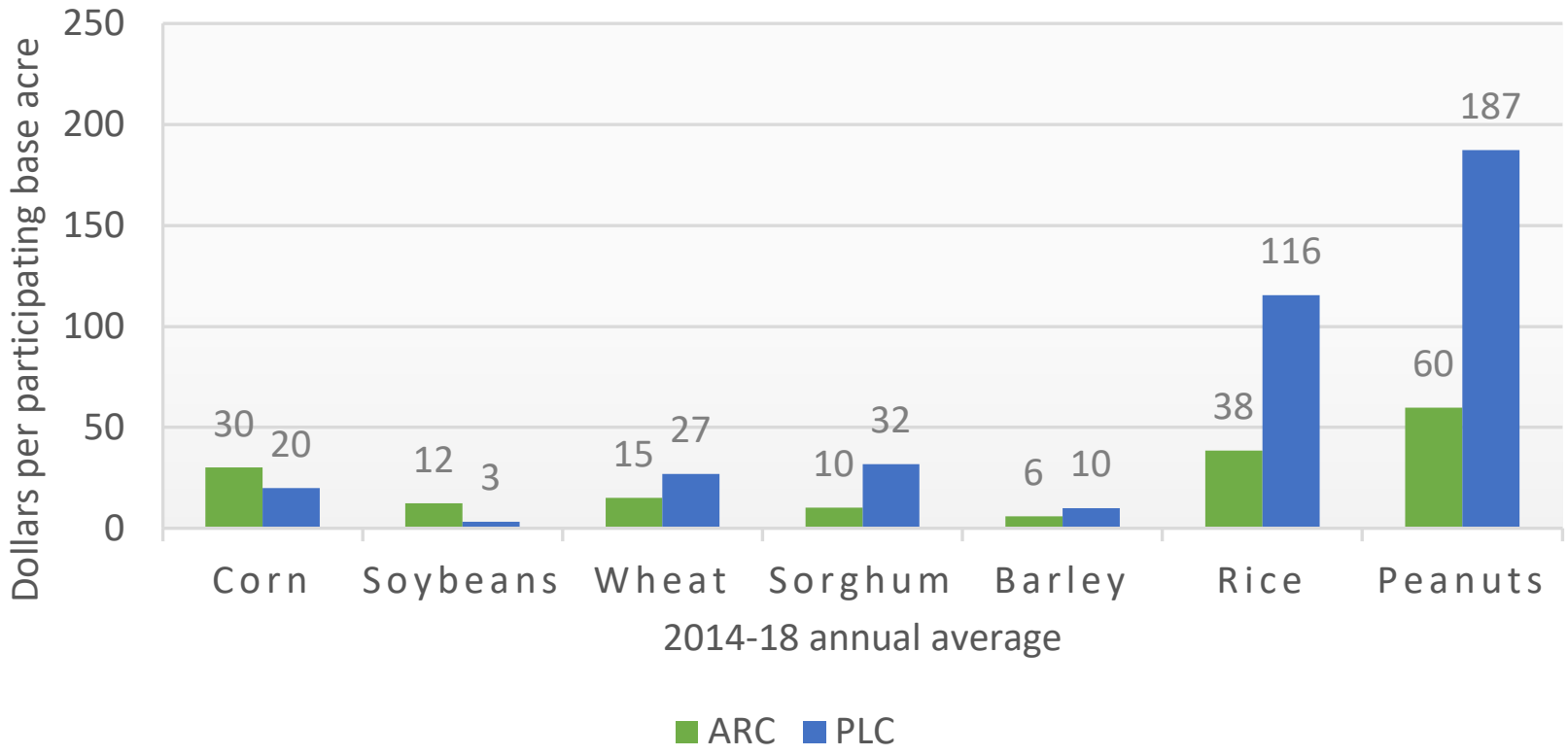
Moving averages reduce ARC benchmarks (corn example)



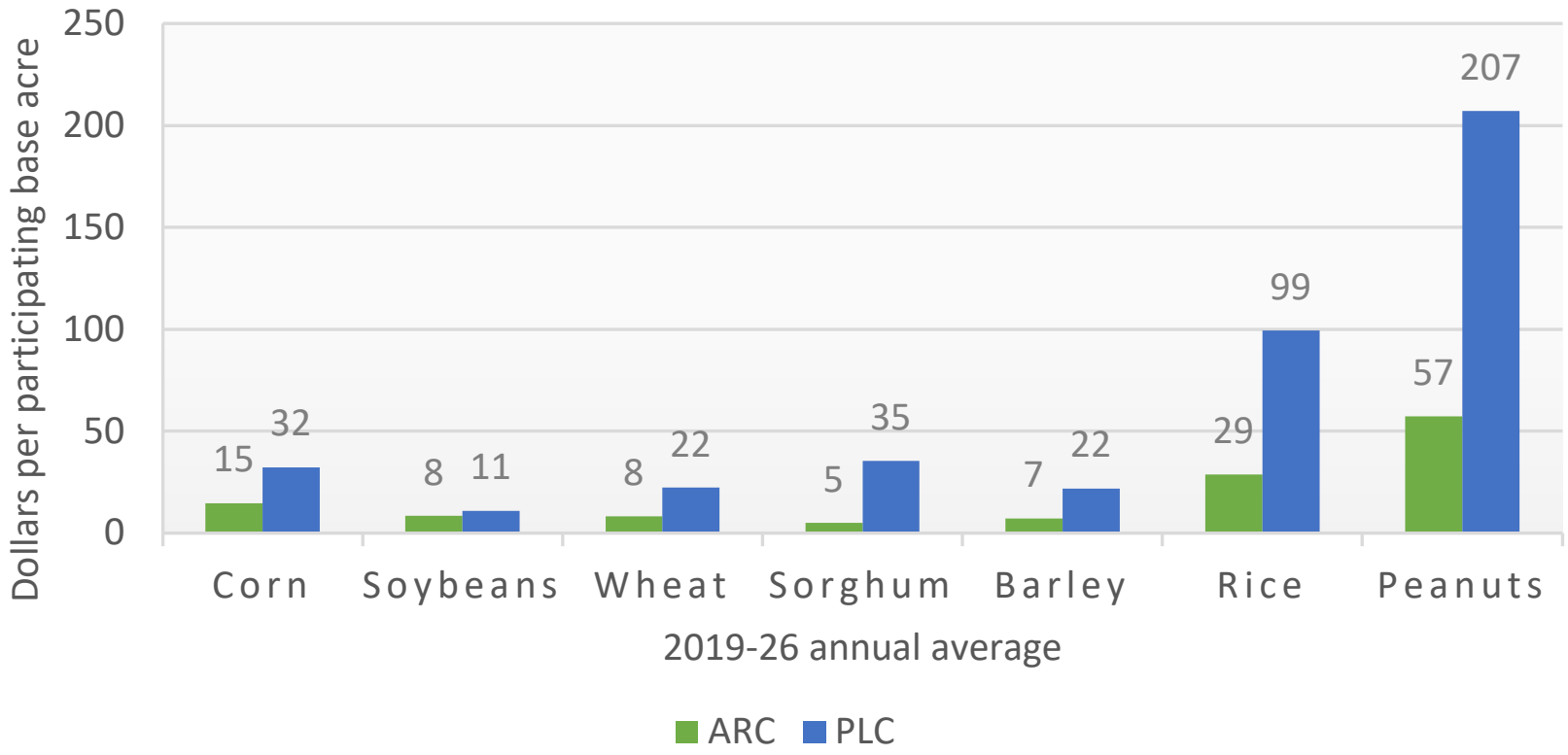
Source: page 8 of 2017 U.S. Baseline Briefing Book

ARC and PLC payments differ by crop



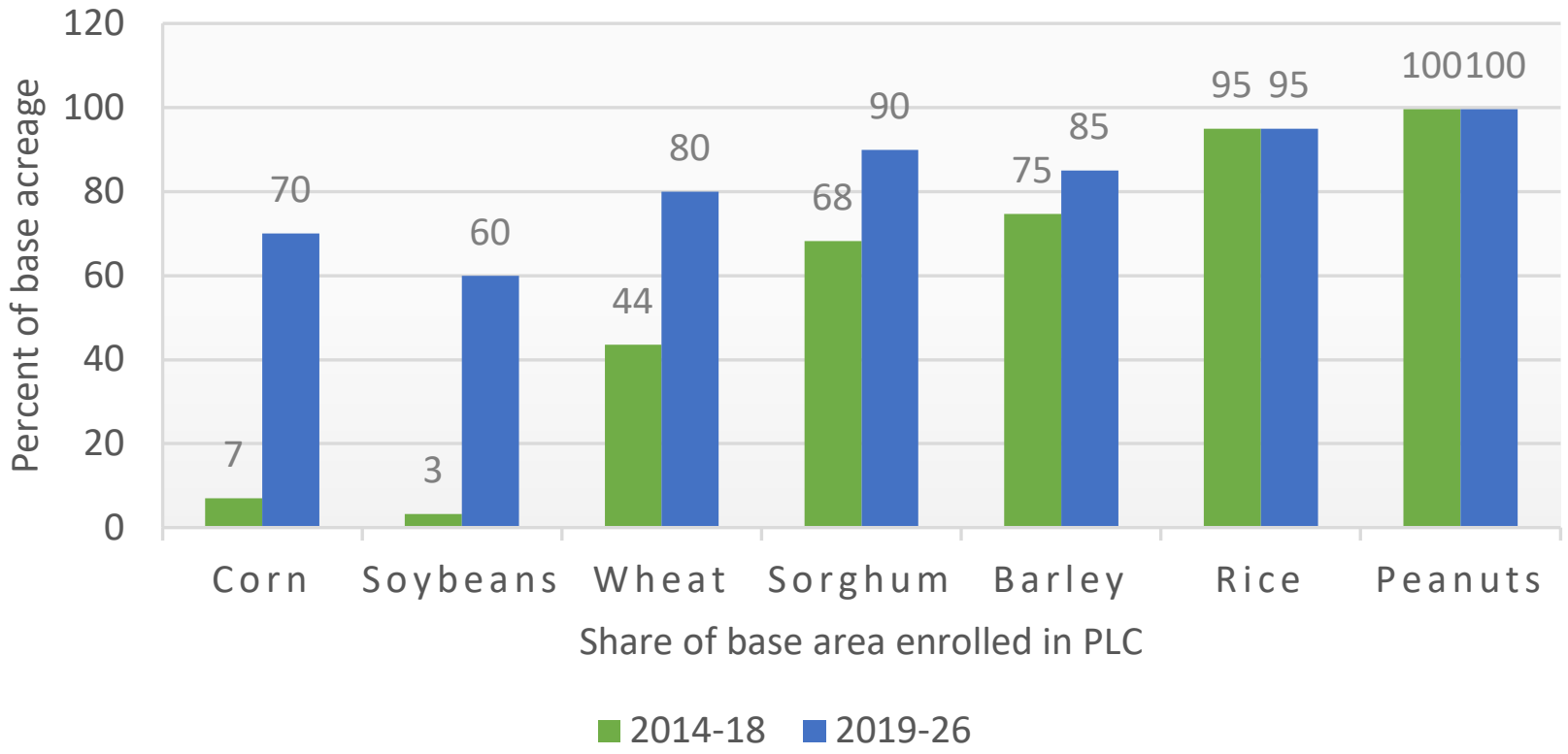
Source: page 10 of 2017 U.S. Baseline Briefing Book

For some crops, patterns change after 2019



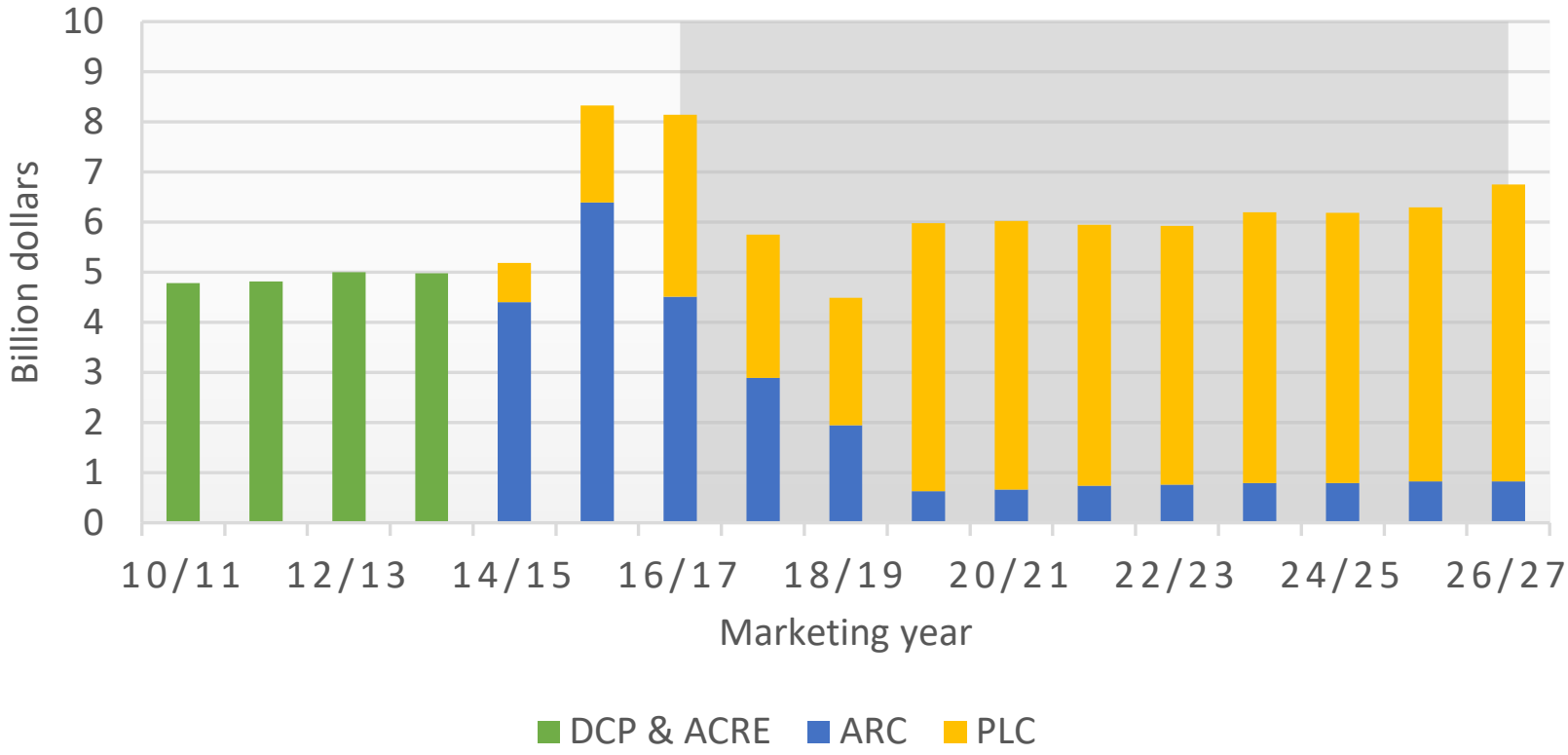
Source: page 10 of 2017 U.S. Baseline Briefing Book

PLC enrollment expected to increase in 2019



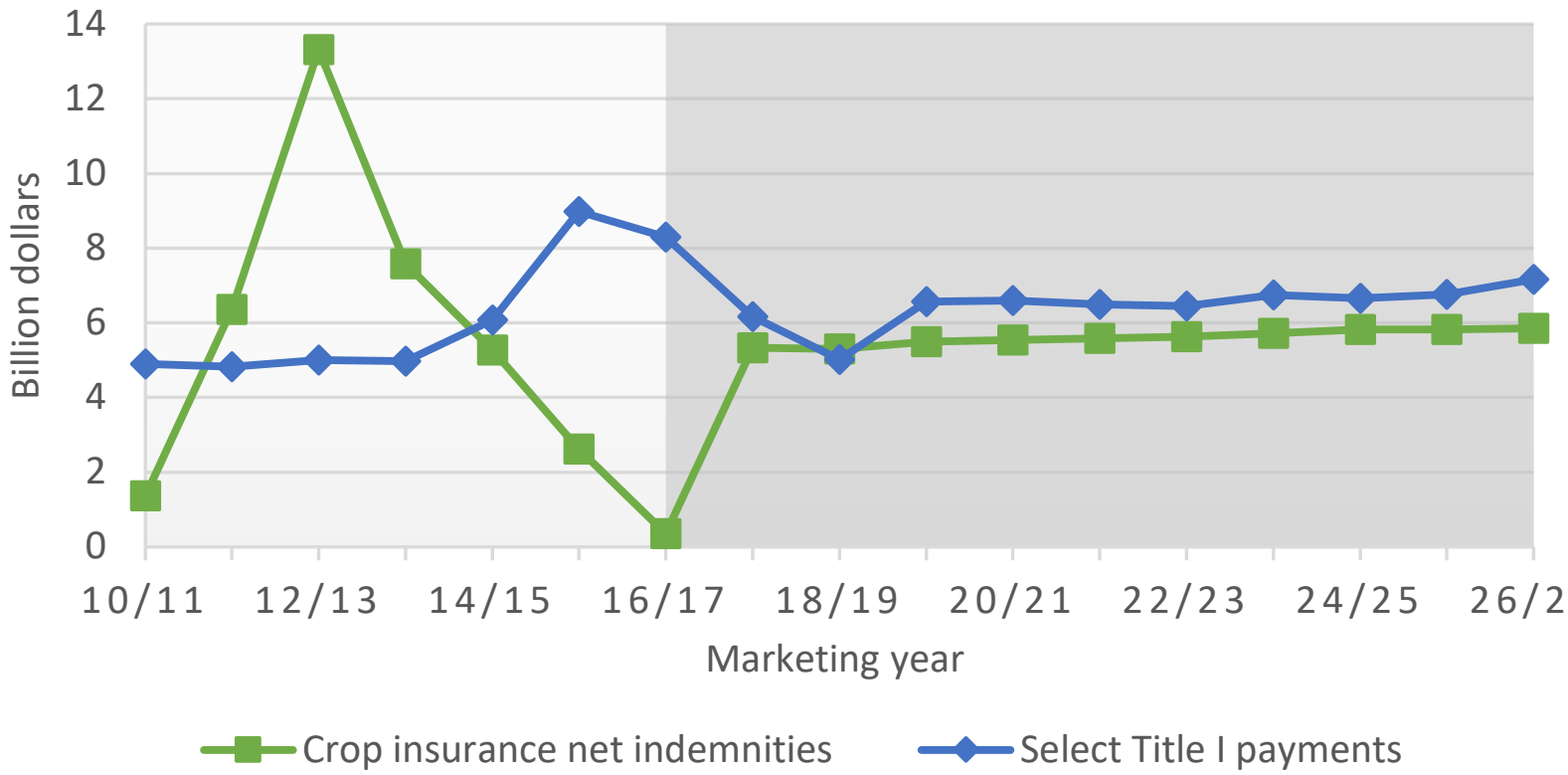
Source: page 10 of 2017 U.S. Baseline Briefing Book

ARC payments fall, PLC payments increase



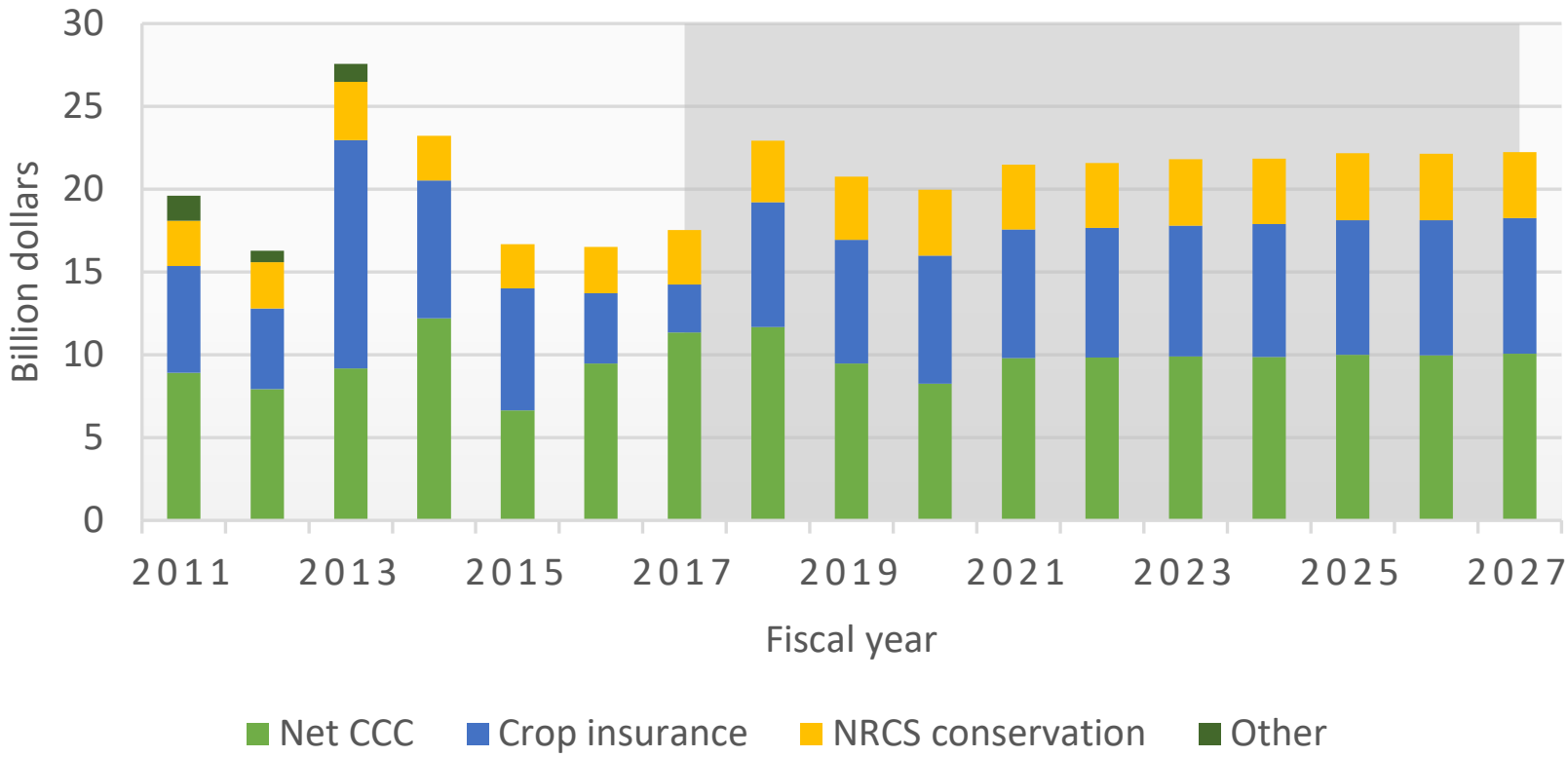
Source: page 5 of 2017 U.S. Baseline Briefing Book

Title I payments exceed crop insurance net indemnities



Source: page 65 of 2017 U.S. Baseline Briefing Book

Crop insurance totals $79 bil. over FY 2018-27 (all programs: $217 bil.)



Source: page 64 of 2017 U.S. Baseline Briefing Book

Federal budget outlook
CBO, January 2017

	FY 2016 actual	FY 2017 projected	FY 2027 projected
Tax and other revenues (bil. dollars)	3,267	3,404	5,140
Outlays*	3,854	3,963	6,548
Deficit	587	559	1,408
Debt held by public	14,168	14,838	24,893
Tax, other revenues (share of GDP)	17.8%	17.8%	18.4%
Outlays	20.9%	20.7%	23.4%
Deficit	3.2%	2.9%	5.0%
Debt held by public	77.0%	77.5%	88.9%

* Increasing costs for Social Security ($741 billion) and Medicare ($697 billion) account for 56% of the $2.6 trillion increase in total projected federal spending between FY 2017 and FY 2027.

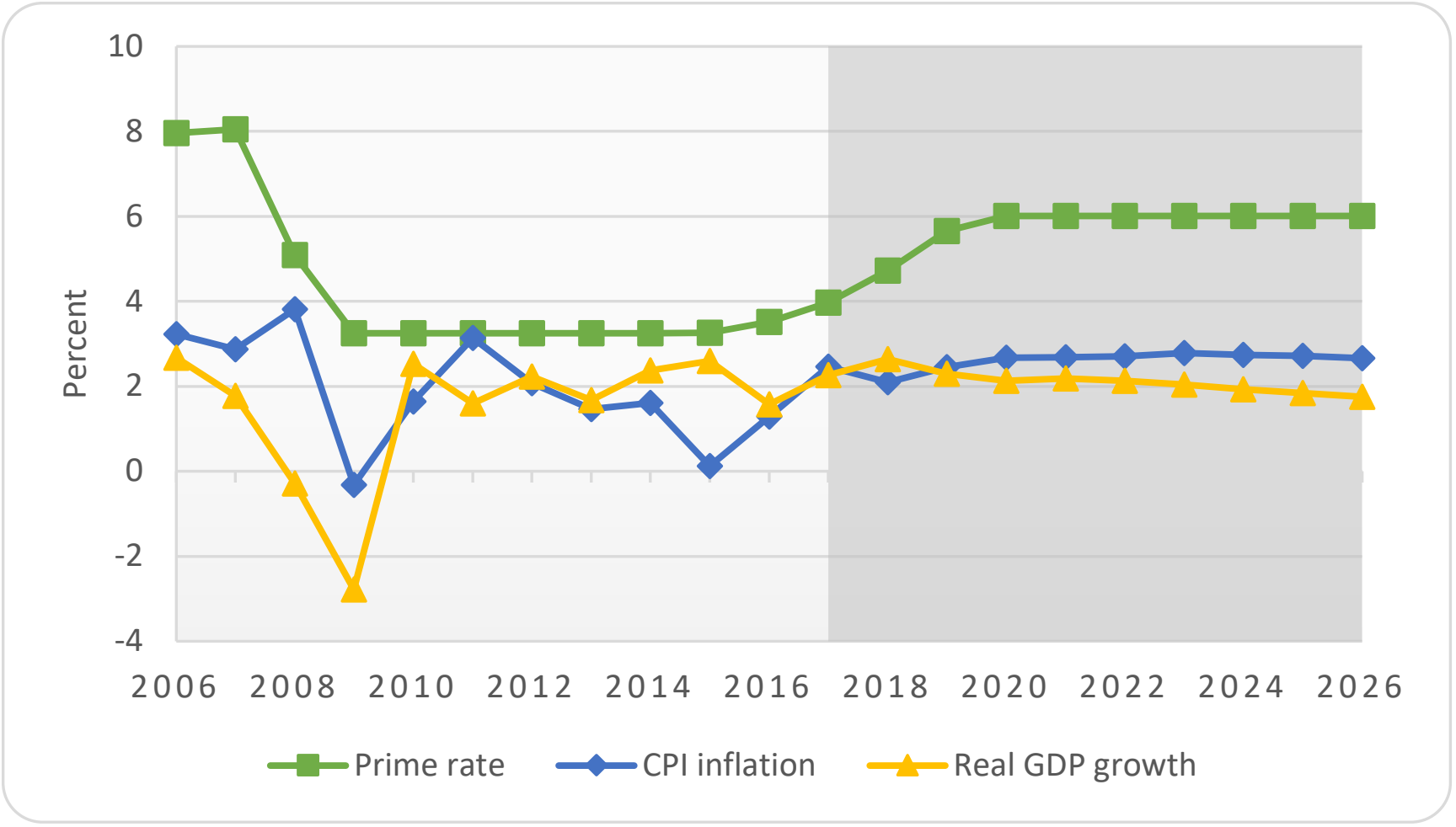
Some 2017 issues: President's budget for FY 2018

- USDA
  - $4.7 billion (21%) less in discretionary spending
  - End water and wastewater programs ($500 mil.)
  - "Reduce staffing in USDA's Service Center Agencies"
  - "Reduce funding for USDA's statistical capabilities"
  - Cut international food aid
  - Does NOT change "mandatory" programs like farm programs, SNAP (that could come later)
- Also large cuts at State, EPA, elsewhere

Some 2017 issues: Interest rates

- Federal Reserve announced a rate increase earlier this year
- More could be coming

Real GDP growth is steady, interest rates rise



Source: page 12 of 2017 U.S. Baseline Briefing Book

Some 2017 issues: Health care reform

- House passed bill on May 4
- Outlook in Senate unclear
- Could have implications for other legislation, such as tax reform

Some 2017 issues: Tax reform

- Uncertain outlook for tax reform
- Some of the many issues of interest to agriculture
  - Tax rates (personal and corporate)
  - Interest and other deductions
  - Estate tax and basis step-up
  - Border adjustment tax

The next farm bill

- 2018 farm bill could look mostly like 2014 farm bill
  - Many like what they have
  - Hard to agree on alternatives
  - If no agreement on new bill, could be “forced” to extend current bill, at least for awhile
- But many would like at least some tweaks
- And some want major reforms

Continuity provides a suite of options and safety net programs

- Crop insurance
  - To protect against drop in yields or revenue within a year
- Agricultural Risk Coverage
  - To protect against a drop in revenues relative to experience of recent years
- Price Loss Coverage
  - To protect against an extended period of low prices

Possible tweaks under a "Continuity option"

- What to do about dairy?
  - Few appear to like current Margin Protection Program
  - January CBO baseline had $75 million/year in dairy outlays over FY 2018-27
  - Milk production value: about $40 billion/year
  - Hard to build a program that does much for producers if cost is <0.2% of value of milk
  - And if want to spend more, where does money come from?

Possible tweaks under a "Continuity option"

- What to do about cotton?
  - 2014 ended cotton commodity programs, other than marketing loans
  - No program to protect against multi-year low prices or returns
  - One option: cottonseed program, either by act of Secretary under "other oilseed" authority or by Congressional action
  - Possible complications: budget issues, generic base, response of countries that brought original WTO case

Possible tweaks under a "Continuity option"

- What to do about ARC/PLC?
  - Should payments be on base or planted area? Budget and WTO implications
  - Change ARC formulas?
  - Change PLC reference prices?
  - Do something to reduce discrepancies in county ARC payments?

Possible tweaks under a "Continuity option"

- What to do about CRP?
  - Should limit on size of CRP be increased from current 24 million acres?
  - Should way in which rental rates are set be changed?
  - What types of acres should be targeted?
  - Should there be another program with a shorter enrollment period (Sen. Thune: 5 years)?

“Change option”

- Some want more dramatic changes
- Will someone come up with a new approach?
- Are the votes there for a “continuity” farm bill?
  - Need 218 in House and 51 or 60 in Senate if President will sign
  - Or 2/3 in both chambers to overcome a veto
- What role will budget concerns play?
- What will the President be willing to sign?

Thanks!

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