



Economic Impact of Future Funding Scenarios on USDA MAP & FMD Programs

Prepared for:
MAP & FMD Coalitions

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Foreward

Scope

This study evaluates the impacts of select future funding scenarios on the United States Department of Agriculture (USDA)'s Market Access Program (MAP) and Foreign Market Development (FMD) program.

Sponsor

This study was prepared for the Map and FMD Coalitions; the views expressed herein are strictly those of the authors.

Contributors

This study was prepared by Dr. Gary W. Williams, Texas A&M University; Dr. Jeffrey J. Reimer, Oregon State University; Dr. Rebekka M. Dudensing, Texas A&M University; and Joseph Somers, Vice President, Informa Economics, IEG.

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Disclaimer

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Glossary

Computable General Equilibrium (CGE) Model: a model based on economic theory that uses actual economic data to estimate how an economy might react to the changes in a policy or program, or how the economy would differ in the absence of a policy or program.

Elasticity: a measure of responsiveness. In the context of this study, the relative change in demand due to a relative change in price or promotion expenditures. Higher elasticity indicates more responsive demand.

Employment: total full- and part-time jobs resulting from direct spending.

Excess Demand (Supply): the difference between the quantity demanded (supplied) in the U.S. and the quantity supplied (demanded) in the U.S.

Full-Employment Model: model assuming the aggregate labor supply is fixed, labor is mobile across economic sectors and the prices of labor as well as all goods and services are flexible (required by OMB).

IMPLAN: (IMpact Analysis for PLANning) input-output model, data and software used to analyze economics under the less than full employment scenarios.

Labor Income: employee compensation and proprietor income resulting from direct spending.

Less-Than-Full-Employment Model: model assuming that unemployment exists in the economy so that an increase in economic activity resulting from additional exports generated through USDA Export Market Development Programs can generate additional labor by drawing labor from the ranks of the unemployed at a constant wage.

Output: overall economic activity (sales) in the region resulting from direct spending.

Value-Added: contribution to regional gross domestic product (GDP) through wages, profits, interest, and indirect business taxes resulting from direct spending.

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I. EXECUTIVE SUMMARY

A. Introduction

The purpose of this study is to provide guidance to policymakers on the impacts of alternative increased funding scenarios for USDA's Foreign Market Development Program (FMD) and Market Access Program (MAP) and industry market promotion contributions on export revenues, the farm economy and the overall macro economy. The following two future funding scenarios were conducted to evaluate these impacts:

- *Scenario 1:* Government expenditures for MAP and FMD are phased in by \$46.9 million per year over five years ending in a total of \$469 million (or double the base year) and cooperator contributions are increased by approximately 10% in the first year to \$515.6 million and maintained flat for the following four years.
- *Scenario 2:* Government expenditures for MAP and FMD are phased in by \$46.9 million per year over five years ending in a total of \$469 million (or double the base year) and cooperator contributions are increased by \$46.9 million per year to achieve a 50% increase in cooperator contributions at the end of five years to \$703.6 million.

This study uses the same methodology used in the previous Informa cost benefit study to measure the impacts of the two future funding scenarios above¹.

- Econometric analysis to measure export revenue impacts.
 - This study uses the Bulk and HVP export demand models developed in the earlier 2016 study to measure the impact of increasing market promotion funding on export revenues.
 - Agricultural export demand simulations take price effects into account by using GASM model.
 - Results include annual and cumulative changes in gains for exports revenues.
- Economic impact analysis under less than full employment (less) to measure the impacts on the farm economy and macro economy.
 - Using the results of the econometric analysis, the economic impact analysis will use an IMPLAN model to determine the extent of the impact on the farm and U.S. economies under a less than full employment assumption where all prices are fixed including wage rates.
 - Results will include annual and cumulative changes in national farm cash receipts, farm income, farm assets, GDP, Output (gross sales), labor income and jobs.

¹ See *Economic Impact of USDA Export Market Development Programs*, July 2016, for more detail.

- General equilibrium analysis under full employment (full) to measure the impacts on the farm economy and macro economy.
- Using the results of the econometric analysis, the general equilibrium analysis will utilize a computable general equilibrium (CGE) model of the U.S. economy to measure the general equilibrium impacts of the USDA market development program on the U.S. economy.
- Results will include annual and cumulative changes in national farm cash receipts, farm assets, GDP, output (gross sales), labor income and jobs.

The two future funding scenarios in this study use the same base starting point in the previous study with MAP and FMD combined funding of \$234.5 million and cooperator contributions of \$468.7 million.

The major differences in the increased future funding scenarios used in this study compared to the increased future funding scenario in the previous study are:

- This study used a 5-year forecast period (5-year farm bill period) while the previous study used a 15-year forecast period.
- The MAP and FMD expenditures are doubled in this study while they were increased by 50% in the previous study.
- Industry contributions are increased in this study under both scenarios while they were held flat in the previous study.

The future likely export revenue effects of the two scenarios are first considered. Then a national impact analysis of the two future funding scenarios is conducted to measure the future potential farm economy and national economic impacts of the MAP and FMD programs under those funding assumptions.

B. Major Findings

Both scenarios generate higher export revenues and benefit both the farm economy and macro economy. However, the gains are higher in the second scenario because of the larger cooperator contributions. The previous study interviews² of MAP and FMD participants add support to the higher industry contributions used in Scenario 2:

- Study interviewees view the MAP and FMD programs as vital to their industry to remain competitive in world markets.

² Ibid.

- Essentially all interviewees said they would expand their market promotion activities if funding was increased because of the effectiveness of their current activities.
- Some interviewees also said they would expand their market promotion offices overseas.

Export gains were significant:

- Scenario 1 added \$3.4 billion on average annually to export value and added \$17.1 billion over the entire five-year period.
- Scenario 2 added \$4.5 billion on average annually to export value and added \$22.5 billion over the entire five-year period.

Contributions to the farm economy were substantial:

- Farm cash receipt gains:
 - Scenario 1 added on average annually between \$1.8 billion (full) and \$2.2 billion (less) and over the entire five-year period added between \$8.9 billion (full) to \$11.1 billion (less).
 - Scenario 2 added annually between \$2.3 billion (full) and \$2.9 billion (less) and over the entire five-year period added between \$11.7 billion (full) to \$14.6 billion (less).
- Net cash farm income gains:
 - Scenario 1, under both full employment and less than full employment, added on average annually \$0.5 billion and over the entire five-year period added \$2.7 billion.
 - Scenario 2, under both full employment and less than full employment, added on average annually \$0.7 billion and over the entire five-year period added about \$3.5 to \$3.6 billion.
- Farm asset gains:
 - Scenario 1 added on average annually between \$0.19 billion (full) and \$0.29 billion (less) and over the entire five-year period added between \$1.0 billion (full) to \$1.5 billion (less).
 - Scenario 2 added annually between \$0.3 billion (full) and \$0.4 billion (less) and over the entire five-year period added between \$1.3 billion (full) to \$1.9 billion (less).
- Jobs added in the agri-food sector:
 - Under Scenario 1 added between 17,200 jobs (full) and 24,200 (less).

- Under Scenario 2 added between 22,700 jobs (full) and 31,900 (less).

Contributions to the overall macro economy were also important:

■ Gains in output (sales):

- Scenario 1 added on average annually between \$1.3 billion (full) and \$10.6 billion (less) and over the entire five-year period added between \$6.4 billion (full) to \$53.1 billion (less).
- Scenario 2 added annually between \$1.7 billion (full) and \$14.0 billion (less) and over the entire five-year period added between \$8.4 billion (full) to \$70.0 billion (less).

■ Gains in US GDP:

- Scenario 1 added on average annually between \$0.8 billion (full) and \$4.5 billion (less) and over the entire five-year period added between \$4.1 billion (full) to \$22.7 billion (less).
- Scenario 2 added annually between \$1.1 billion (full) and \$6.0 billion (less) and over the entire five-year period added between \$5.3 billion (full) to \$30.0 billion (less).

■ Gains in U.S. labor income:

- Scenario 1 added on average annually between \$0.3 billion (full) and \$2.6 billion (less) and over the entire five-year period added between \$1.6 billion (full) to \$13.1 billion (less).
- Scenario 2 added annually between \$0.4 billion (full) and \$3.5 billion (less) and over the entire five-year period added between \$2.2 billion (full) to \$17.5 billion (less).

■ Jobs generated:

- An increase in U.S. employment of 64,000 jobs under Scenario 1 and an increase of 84,600 jobs under Scenario 2.

II. ANALYSIS OF TWO FUTURE FUNDING SCENARIOS FOR THE USDA EXPORT MARKET DEVELOPMENT PROGRAMS

This report considers the likely U.S. agricultural export revenue and the general economy impacts of two proposed future market development program funding scenarios:

- *Scenario 1*: Government expenditures for MAP and FMD are doubled over five years and cooperator contributions are increased by 10% in the first year and maintained flat for the following four years.
- *Scenario 2*: Government expenditures for MAP and FMD are doubled over five years as in Scenario 1 but cooperator contributions are increased by about \$47 million in each year of the five-year period.

In the previous Informa study, the *increased funding scenario* analyzed was similar to *Scenario 1* in this study except that government expenditures were only increased by 50% in the previous study. Also, while cooperator contributions remained flat in the previous study, cooperator contributions in *Scenario 1* of this study are increased by 10% in the first year over the previous year before being held flat for the following four years.

Scenario 2 in this analysis is similar to *Scenario 1* in that the about \$47 million increase in cooperator expenditures in the first year in *Scenario 2* is about 10% of the level of cooperator contributions in the previous (base) year (\$468.7 million). The main difference between the two scenarios is that in years 2 through 5, cooperator contributions increase by a constant about \$47 million in each year in *Scenario 2* but do not increase in *Scenario 1*. In both scenarios, government expenditures double incrementally over the five years from \$234.5 million in the base year to about \$469.0 million in year 5.

In this report, the future likely export revenue effects of the two scenarios are first considered. Then a national impact analysis of the two future funding scenarios is conducted to measure the future potential national economic impacts of the USDA Export Market Development Programs under those funding assumptions.

A. Export Revenue Effects of the Future Funding Scenarios

As in the previous Informa study, this study uses the *Flat Funding Scenario* from that study as the baseline forecast against which the changes imposed by the changes in funding defined in *Scenarios 1 and 2* in this study are measured. Because the two scenarios of interest in this study require only a 5-year forecast horizon rather than the 15-year forecast horizon of the previous Informa study, the baseline forecast from the previous study is likewise truncated after the fifth year. Recall that the *Flat Funding*

Scenario in the previous Informa study assumed that the USDA Export Market Development Programs are fully funded at \$234.5 million per year along with cooperator contributions at the 2014 level of \$468.7 million in every year over the forecast period. The *Flat Funding Scenario* forecast (referred to as the *Baseline Forecast* in this study) was developed using the BULK and HVP export demand models and forecasts for most exogenous variables (real GDP of non-U.S. countries, the agricultural trade weighted U.S. exchange rate, the world GDP deflator, and population of non-U.S. countries) based on the projections provided by the USDA International Macroeconomic Dataset (baseline projections) (USDA 2015).

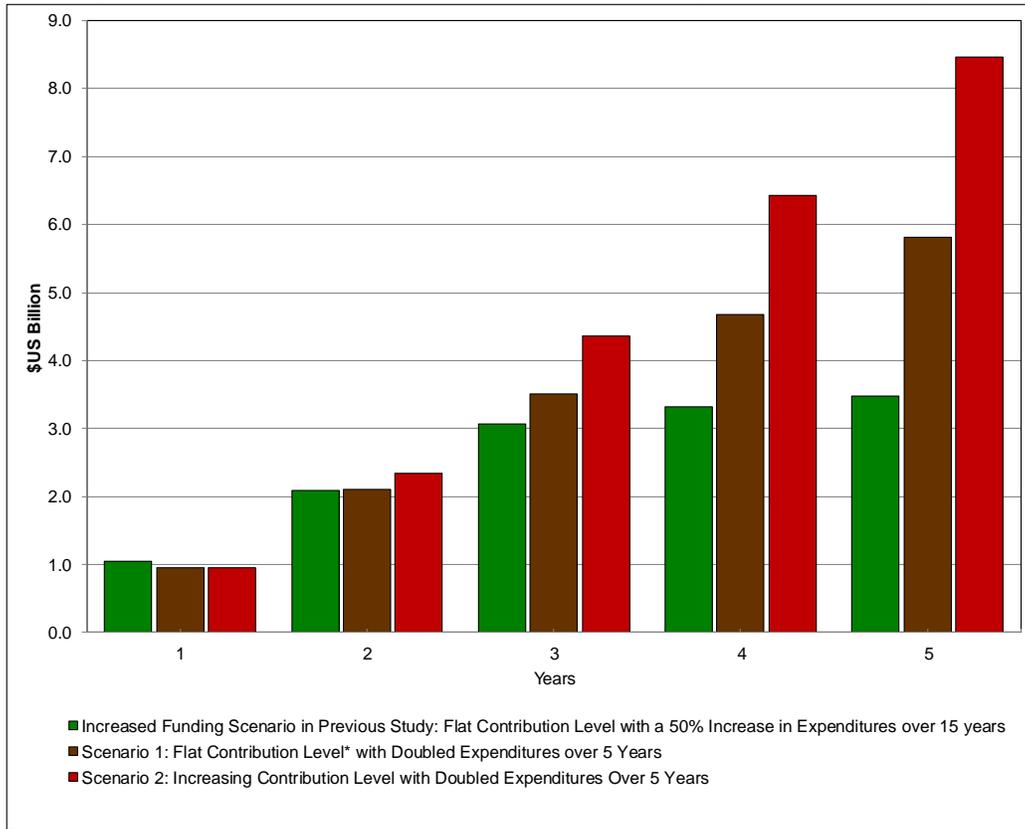
Scenario 1: Government expenditures for MAP and FMD are doubled over five years and cooperator contributions are increased by 10% in the first year and maintained flat for the following four years

The analysis of *Scenario 1* was conducted in the identical manner as the future funding scenarios in the previous Informa study using the aggregate U.S. agricultural export demand models developed as a part of that study linked to the GASM model at Texas A&M University. This scenario assumes that the government (MAP/FMD) expenditures are doubled over five years from \$234.5 million in the base year (2014) to 469.0 million in the fifth year in constant increments of \$46.9 per year while contributor contributions are increased by 10% (also \$46.9 million) in the first year and then left at that level through the fifth year. Total funding (government expenditures plus cooperator contributions) is consequently assumed to be above the baseline (flat) funding level by 13.3% in the first year, 20% in the second year, 26.7% in the third year, 33.3% in the fourth year, and 40% in last year. The result is a declining rate of increase in total funding from 13.3.0% in the first year down to 5.0% in the fifth year. The declining rate of increase in the total funding in this scenario is the result of both the assumed flat level of cooperator funding after the first year and the assumed constant increments in government expenditures over the full five years.

In the analysis of this scenario, the assumed increases in total agricultural export promotion funding over the five year forecast horizon results in increasing additions to agricultural export value from almost \$1 million in the first year (0.7%) up to \$5.8 million (3.5%) in the fifth year, an average annual increase of \$3.4 million (2.2%) (Exhibit 1). Compared to the simulation results of the Increased Funding Scenario in the previous Informa study, the export revenue increases achieved under *Scenario 1* are similar in the initial years but increasingly larger through year 5 because of the doubling of government expenditures over that period.

The export revenue gains in this scenario begins slowly because it takes time for any change in funding to realize its full effects on foreign export demand and prices as demonstrated in the previous Informa study. The annual increases in agricultural export revenue generated by the assumed increase in total agricultural export promotion funding under this scenario results in the addition of a total \$17.1 billion over the five years of the

Exhibit 1: Simulated Annual Changes in U.S. Export Revenue Achieved Under Agricultural Export Funding Scenarios 1 and 2 with Comparison to the Increased Funding Scenario in the Previous Informa Study, Year 1 through Year 5



analysis.

In compliance with OMB guidelines for conducting benefit-cost analyses (OMB 1992), we also conducted a sensitivity analysis of the results of this scenario relative to those of the baseline funding scenario as a result of varying the long-run promotion elasticity above and below the mean estimate by one standard deviation. The differences between the resulting high and low estimates around the mean estimates in each year increases from \$0.5 billion in the first year up to \$2.5 billion in the fifth year. Thus, the estimated addition to export revenue achieved through the USDA Export Market Development programs in the first year ranges from a low of \$0.7 billion to a high of \$1.2 billion (mean \$1.0 billion) and from a low of \$4.6 billion to a high of \$7.0 billion in the fifth year (mean \$5.8 billion) with the midpoint low of \$2.8 billion and a high of \$4.3 billion (mean \$3.5 billion). The ranges around the mean estimates of added export revenue are relatively small despite the assumed increases in funding due to the high statistical significance of the estimated promotion elasticity estimated in the previous Informa study and consequent low standard deviation.

Scenario 2: Government expenditures are doubled over five years as in Scenario 1 but cooperator contributions are increased \$47 million in each year of the five-year period

This scenario also was conducted in the identical manner as the future funding scenarios in the previous Informa study using the aggregate U.S. agricultural export demand models developed as a part of that study linked to the GASM model at Texas A&M University. This scenario assumes that the government expenditures for MAP and FMD are doubled over five years as in Scenario 1 but cooperator contributions are increased by about \$47 million in each year of the five-year period. Total export promotion funding (government expenditures plus cooperator contributions) is consequently assumed to be above the baseline (flat) funding level by 13.3% in the first year, 26.7% in the second year, 40.0% in the third year, 53.4% in the fourth year, and 66.8% in last year. The result is a declining rate of increase in total funding from 13.3% in the first year down to 8.7% in the fifth year. The declining rate of increase in the total funding in this scenario is the result of the assumed constant increments of about \$47 million in both government expenditures and cooperator contributions in every year of the 5-year period.

In the analysis of this scenario, the assumed increases in total agricultural export promotion funding over the five-year forecast horizon results in increasing additions to agricultural export value from almost \$1 million in the first year (0.7%) up to \$8.5 million (5.2%) in the fifth year, an average annual increase of \$4.5 million (2.9%) (Exhibit 1). Compared to the simulation results of the Increased Funding Scenario in the previous Informa study and the results of *Scenario 1*, the export revenue increases achieved under *Scenario 2* are similar in the initial years but increasingly larger than both of the other scenarios after year 1 through year 5 because of the doubling of government expenditures over that period. In the fifth year, Scenario 2 results in an addition to export revenue of \$8.5 million which is \$2.6 million higher (45.4%) than is the case for Scenario 2 and \$5.0 million higher (143.8%) than for the Increased Funding Scenario in the previous Informa study.

Export revenue gains in this scenario also begin slowly because of the time required for the increase in funding to realize its full effects on foreign export demand and prices as demonstrated in the previous Informa study. The annual increases in agricultural export revenue generated by the assumed increase in total agricultural export promotion funding under this scenario results in the addition of a total \$22.5 million over the five years of the analysis.

In compliance with OMB guidelines for conducting benefit-cost analyses (OMB 1992), we also conducted a sensitivity analysis of the results of this scenario relative to those of the baseline funding scenario as a result of varying the long-run promotion elasticity above and below the mean estimate by one standard deviation. The differences between the resulting high and low estimates around the mean estimates in each year increases from \$0.5 billion in the first year up to \$3.6 billion in the fifth year. Thus, the estimated addition to export revenue achieved through the USDA Export Market Development programs in

the first year ranges from a low of \$0.7 billion to a high of \$1.2 billion (mean \$1.0 billion) and from a low of \$6.6 billion to a high of \$10.3 billion in the fifth year (mean \$8.5 billion) with the midpoint low of \$3.4 billion and a high of \$5.3 billion (mean \$4.4 billion). The ranges around the mean estimates of added export revenue are relatively small despite the assumed increases in funding due to the high statistical significance of the estimated promotion elasticity estimated in the previous Informa study and consequent low standard deviation.

B. National Economic Analysis of the Two Future Funding Scenarios

A national impact analysis of the future funding scenarios is conducted to measure the future potential national economic impacts of the USDA Export Market Development Programs under the future funding assumptions below. Sensitivity analyses were conducted to consider the potential range of results for both export revenue and the overall economy measures.

- *Scenario 1:* Government expenditures for MAP and FMD are phased in by \$46.9 million per year over five years ending in a total of \$469 million (or double the base year) and cooperator contributions are increased by approximately 10% in the first year to \$515.6 million and maintained flat for the following four years.
- *Scenario 2:* Government expenditures for MAP and FMD are phased in by \$46.9 million per year over five years ending in a total of \$469 million (or double the base year) and cooperator contributions are increased by \$46.9 million per year to achieve a 50% increase in cooperator contributions at the end of five years to \$703.6 million.

The impacts of the two increased funding scenarios on key economic variables over the next five-year period on the farm economy and macro economy are shown in Exhibits 2 and 3 as changes from the respective *flat funding scenario* (base) values. In the agriculture sector, both future funding scenarios extending out five years would raise farm cash receipts, net cash farm income, farm assets, and employment across the full employment and less than full employment analyses.

Scenario 1 impacts (Exhibit 2) on the farm economy and macro economy are substantial:

- An increase in U.S. farm cash receipts of between \$1.8 billion (full) and \$2.2 billion (less)³. Over the entire period, U.S. farm cash receipts would be a total of \$8.9 billion (full) to \$11.1 billion (less) higher relative to the flat funding scenario.

³ “Full” refers to the results assuming full employment and “less” refers to the results assuming less than full employment.

- An increase in net cash farm income of \$0.5 billion assuming either full or less than full employment. Over the entire period, net cash farm income would be a total of \$2.7 billion higher relative to the flat funding scenario under both assumptions of full and less than full employment.
- An increase in the value of farm assets of between \$0.19 billion (full) and \$0.29 billion (less). Over the entire period, farm asset values would be a total of \$1.0 billion (full) to \$1.5 billion (less) higher relative to the flat funding scenario.
- An increase in agri-food sector employment of between 17,200 jobs (full) and 24,200 jobs (less).
- An increase in U.S. output (gross sales) of between \$1.3 billion (full) and \$10.6 billion (less). Over the entire period, U.S. output would be a total of \$6.4 billion (full) to \$53.1 billion (less) higher relative to the flat funding scenario.
- An increase in U.S. GDP of between \$0.8 billion (full) and \$4.5 billion (less). Over the entire period, U.S. GDP would be a total of \$4.1 billion (full) to \$22.7 billion (less) higher relative to the flat funding scenario.
- An increase in U.S. labor income of between \$0.3 billion (full) and \$2.6 billion (less). Over the entire period labor, income would be a total of \$1.6 billion (full) to \$13.1 billion (less) higher relative to the flat funding scenario.
- An increase in U.S. employment of 64,000 jobs assuming less than full employment.

Scenario 2 impacts (Exhibit 3) on the farm economy and macro economy are even more substantial:

- An increase in U.S. farm cash receipts of between \$2.3 billion (full) and \$2.9 billion (less)⁴. Over the entire period, U.S. farm cash receipts would be a total of \$11.7 billion (full) to \$14.6 billion (less) higher relative to the flat funding scenario.
- An increase in net cash farm income of \$0.7 billion assuming either full or less than full employment. Over the entire period, net cash farm income would be a total of \$3.5 billion higher relative to the flat funding scenario under both assumptions of full and less than full employment.

⁴ “Full” refers to the results assuming full employment and “less” refers to the results assuming less than full employment.

- An increase in the value of farm assets of between \$0.3 billion (full) and \$0.4 billion (less). Over the entire period, farm asset values would be a total of \$1.3 billion (full) to \$1.9 billion (less) higher relative to the flat funding scenario.
- An increase in agri-food sector employment of between 22,700 jobs (full) and 31,900 jobs (less).
- An increase in U.S. output (gross sales) of between \$1.7 billion (full) and \$14.0 billion (less). Over the entire period, U.S. output would be a total of \$8.4 billion (full) to \$70.0 billion (less) higher relative to the flat funding scenario.
- An increase in U.S. GDP of between \$1.1 billion (full) and \$6.0 billion (less). Over the entire period, U.S. GDP would be a total of \$5.3 billion (full) to \$30.0 billion (less) higher relative to the flat funding scenario.
- An increase in U.S. labor income of between \$0.4 billion (full) and \$3.5 billion (less). Over the entire period labor, income would be a total of \$2.2 billion (full) to \$17.5 billion (less) higher relative to the flat funding scenario.
- An increase in U.S. employment of 84,600 jobs assuming less than full employment.

Exhibit 2: General Economy Average Annual Impacts of the Funding Scenario 1 Relative to the Baseline Funding Scenario, Years 1-5^a

| Variable | Flat Funding Base Value ^b | Less than Full Employment | | Full Employment | |
|--|---|------------------------------|-------------------|--------------------------|-------------------|
| | | Change | Percent Change | Change | Percent Change |
| Agriculture Sector | \$US billions | \$US billions | % | \$US billions | % |
| Farm cash receipts | 321.2 | 2.2 (1.3) | 0.7 (0.4) | 1.8 (1.0) | 0.6 (0.3) |
| Net cash farm income | 63.9 | 0.5 (0.3) | 0.8 (0.5) | 0.5 (0.3) | 0.9 (0.5) |
| Farm assets | 2,161.4 | 0.29 (0.17) | 0.01 (0.008) | 0.19 (0.11) | 0.01 (0.005) |
| | 1,000 jobs | 1,000 jobs | | 1,000 jobs | |
| Employment in agri-food sector ^c | 3,900.4 | 24.2 (13.8) | 0.6 (0.4) | 17.2 (9.5) | 0.4 (0.2) |
| U.S. Economy | \$US billions | \$US billions | % | \$US billions | % |
| U.S. Output (Gross Sales) | 25,070.0 | 10.6 (6.0) | 0.04 (0.02) | 1.3 (0.7) | 0.005 (0.003) |
| U.S. GDP | 14,522.5 | 4.5 (2.6) | 0.03 (0.02) | 0.8 (0.4) | 0.006 (0.003) |
| U.S. Labor Income | 9,017.0 | 2.6 (1.5) | 0.03 (0.02) | 0.3 (0.2) | 0.004 (0.002) |
| U.S. Labor Wage Rate | -- | -- | -- | -- | 0.01 (0.006) |
| U.S. Economic Welfare | -- | -- | -- | 0.4 (0.2) | -- |
| | 1,000 jobs | 1,000 jobs | | 1,000 jobs | |
| U.S. Employment | 173,414 | 64.0 (36.5) | 0.04 (0.02) | -- | -- |

Note: -- = Not available as an output from this analysis.

^a Numbers in parentheses are standard deviations based on the 16 observations from 2015-2030.

^b The base value is for the year 2010. The "base value" is the average annual level of a variable in the absence of the promotion program. Some variables such as U.S. economic welfare and labor wage do not have a base value because the models only calculate the change in those variables and not a base value.

^c The base employment value is measured as actual 2010 jobs as reported in IMPLAN. In the full employment analysis, total U.S. employment is held fixed but labor is mobile across sectors of the economy.

Exhibit 3: General Economy Average Annual Impacts of the Increased Funding Scenario 2 Relative to the Baseline Funding Scenario, Years 1-5^a

| Variable | Flat Funding Base Value ^b | Less than Full Employment | | Full Employment | |
|---|--------------------------------------|---------------------------|----------------|----------------------|------------------|
| | | Change | Percent Change | Change | Percent Change |
| Agriculture Sector | \$US billions | \$US billions | % | \$US billions | % |
| Farm cash receipts | 321.2 | 2.9 (2.0) | 0.9 (0.6) | 2.3 (1.5) | 0.7 (0.5) |
| Net cash farm income | 63.9 | 0.7 (0.5) | 1.1 (0.7) | 0.7 (0.5) | 1.1 (0.7) |
| Farm assets | 2,161.4 | 0.4 (0.3) | 0.02 (0.01) | 0.3 (0.2) | 0.01 (0.01) |
| | 1,000 jobs | 1,000 jobs | | 1,000 jobs | |
| Employment in agri-food sector ^c | 3,900.4 | 31.9 (21.4) | 0.8 (0.5) | 22.7 (14.7) | 0.6 (0.4) |
| U.S. Economy | \$US billions | \$US billions | | \$US billions | |
| U.S. Output (Gross Sales) | 25,070.0 | 14.0 (9.4) | 0.06 (0.04) | 1.7 (1.1) | 0.007 (0.004) |
| U.S. GDP | 14,522.5 | 6.0 (4.0) | 0.04 (0.03) | 1.1 (0.7) | 0.007 (0.005) |
| U.S. Labor Income | 9,017.0 | 3.5 (2.3) | 0.04 (0.03) | 0.4 (0.2) | 0.005 (0.026) |
| U.S. Labor Wage Rate | -- | -- | -- | -- | 0.02 (0.01) |
| U.S. Economic Welfare | -- | -- | -- | 0.6 (0.4) | -- |
| | 1,000 jobs | 1,000 jobs | | 1,000 jobs | |
| U.S. Employment | 173,414 | 84.6 (56.8) | 0.05 (0.03) | -- | -- |

Note: -- = Not available as an output from this analysis.

^a Numbers in parentheses are standard deviations based on the 16 observations from 2015-2030.

^b The base value is for the year 2010. The "base value" is the average annual level of a variable in the absence of the promotion program. Some variables such as U.S. economic welfare and labor wage do not have a base value because the models only calculate the change in those variables and not a base value.

^c The base employment value is measured as actual 2010 jobs as reported in IMPLAN. In the full employment analysis, total U.S. employment is held fixed but labor is mobile across sectors of the economy.