JAPAN: ESTIMATES OF SUPPORT TO AGRICULTURE

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DEFINITIONS AND SOURCES

Table 1. Agricultural Support Estimates / Total Transfers contains country Total Support Estimate (TSE) and derived indicators, which cover all agricultural production, i.e. all agricultural commodities produced in the country. Definitions of basic data sets refer to the specific programmes applied in the country. For the Producer Support Estimate (PSE) and Consumer Support Estimate (CSE), each policy measure is classified according to implementation criteria, which include: the *transfer basis* of support (output, input, area/animal numbers/receipts/income, and non-commodity criteria); whether support is based on *current or non-current basis*; whether *production is required* or *not* to receive payment. Each policy measure is also assigned several "labels" indicating additional implementation criteria. "MPS commodities", which vary across countries, are those for which the market price support is explicitly calculated in Tables 4.1 – 4.20.

Table 2. Breakdown of PSE by Commodity and Other Transfers provides a breakdown of the total PSE into four categories reflecting the flexibility given to farmers regarding which commodity to produce within the various policy measures. These categories are: Single Commodity Transfers (SCT); Group Commodity Transfers (GCT); All Commodity Transfers (ACT); and Other Transfers to Producers (OTP). All data sets in Table 2 come from Tables 1 and 3.1 – 3.20 where definitions are included.

Tables 3.1 – 3.19 Producer Single Commodity Transfers contain producer SCT by commodity, which are calculated for Japan for the following commodities: wheat, barley, rice, refined sugar, soybean, milk, beef and veal, pig meat, poultry meat, eggs, apples, cabbage, cucumbers, grapes, mandarins, pears, spinach, strawberries and Welsh onions (Tables 3.1-3.20) provided that the value of production of that commodity exceeds 1% of the total value of production. In addition, SCT for "other commodities" is also calculated (Table 3.20), which covers transfers *to single commodities other than MPS commodities*. All data sets in the calculation of producer SCT by commodity come from Tables 1 and 4.1-4.20 where definitions are included.

Tables 4.1 – 4.20 contain **Market Price Support** (MPS) and **Consumer Single Commodity Transfers** (consumer SCT) by commodity, calculated for the same set of commodities as **Tables 3.1** to **3.20**. Definitions are provided only for basic data sets from which all the other data sets in this table are derived.

Definitions of the indicators, criteria for classification of policy transfers included in support estimation, and methods of calculation are contained in the PSE Manual (*OECD's Producer Support Estimate and*

Related indicators of Agricultural Support: Concepts, Calculations, Interpretation and Use) [http://www.oecd.org/tad/support/psecse].

TABLE 1: Japan: Total Support Estimate

Definitions:

I. Total value of production (at farm gate): Total agricultural production valued at farm gate prices, i.e. value (at farm gate) of all agricultural commodities produced in the country [1].

I.1. Of which share of MPS commodities (%): Share of commodities for which MPS is explicitly calculated (in Tables 4.1-4-20) in the total value of agricultural production.

II. Total value of consumption (at farm gate): Consumption of all commodities domestically produced valued at farm gate prices, and estimated by increasing the value of consumption (at farm gate) of the MPS commodities according to their share in the total value of agricultural production [(II.1) / (I.1) x100].

II.1. Of which MPS commodities: Sum of the value of consumption (at farm gate prices) of the MPS commodities as indicated in Tables 4.1-4.20.

III.1 Producer Support Estimate (PSE): Associated with total agricultural production, i.e. for all commodities domestically produced [Sum of A to G; when negative, the amounts represent an implicit or explicit tax on producers].

A. Support based on commodity outputs

A.1. Market Price Support: On quantities domestically produced (excluding for on-farm feed use -- excess feed cost) of all agricultural commodities, estimated by increasing the MPS for the MPS commodities (sum of the MPS for the MPS commodities listed in the rows bellow) according to their share in the total value of agricultural production [(ΣMPS commodities) / (I.1) x 100].

A.2. Payments based on output:

Production promotion of sugar (1986-2006): payment per tonne of beet (cane) multiplied by quantity of sugar beet (cane) production. This transfer is included in the sugar SCT (Table 3.5). Use of labels: Production and payment limits: NO; Variable payment rates: NO; Input constraints: NO.

Production promotion of cheese and other dairy products (1987-2016): payment per kg of milk used to produce cheese. This transfer is included in the milk SCT (Table 3.6). Use of labels: Production and payment limits: NO; Variable payment rates: NO; Input constraints: YES (Mandatory).

Deficiency payment for beef calf producers (1990-Present): payment per head calculated as the difference between the guaranteed standard price and quarterly average calf price, multiplied by the quantity of beef calf production. This transfer is included in the beef SCT (Table 3.7). Use of labels: Production and payment limits: NO; Variable payment rates: YES (Payments rate is variable depending on quarterly average calf price); Input constraints: YES (Mandatory).

Price Stabilisation Fund on Eggs (PSFE) payment (1986-Present): payment per kilogramme under the PSFE to egg producers under contract, calculated as 90 per cent of the difference between the standard price and average trading price, multiplied by the quantity of egg sold. This transfer is included in the egg SCT (Table 3.10). Use of labels: Production and payment limits: NO; Variable payment rates: YES (Payments rate is variable depending on current price level); Input constraints: YES (Mandatory).

Price stabilization measures for vegetables (National (1986-Present) and Sub-national (2007-Present)): payment per the quantity of production of specific vegetables under the contract, calculated as the difference between 90 per cent of the average of past six years and the average of annual market price. The share of National and sub-national payments depend on the vegetables. Use of labels: Production and payment limits: NO; Variable payment rates: YES (Payments rate is variable depending on price level); Input constraints: YES (Mandatory).

Fruit supply stabilization program (2011-Present): budgetary expenditure on the additional expenses for supporting the planned fruits production program, and processing of fresh fruits when the market price of fruits was declined or foreseen to decline, in order to keep supply and demand of the fruits in balance. Use of labels: Production and payment limits: NO; Variable payment rates: NO; Input constraints: NO.

Direct payment for barley (2000-2006): payment per tonne for barley under barley and wheat management stabilization programme. This transfer is included in the barley SCT (Table 3.2). Use of labels: Production and payment limits: NO; Variable payment rates: NO; Input constraints: NO.

Direct payment for wheat (2000-2006): payment per tonne for wheat under barley and wheat management stabilization programme. This transfer is included in the wheat SCT (Table 3.1). Use of labels: Production and payment limits: NO; Variable payment rates: NO; Input constraints: NO.

Payment on rice (JRIS) (1986-2009): budgetary expenditure based on rice production. *Rice Farming Income Stabilisation Program (JRIS)* was introduced in 1998 and revised in 2004, to compensate voluntary marketed rice producers for part of the loss of income caused by a fall in the market price. Eligible producers have to fulfil the required diversion target of the year, enter into a contract with agricultural co-operatives and deposit certain amount of money as "limited withdrawal deposit" in the co-operatives. This transfer is included in the rice SCT (Table 3.4). Use of labels: Production and payment limits: YES (Eligible producers have to fulfil the required diversion target of the year); Variable payment rates: YES (Payments rate is variable depending on current price level); Input constraints: NO.

Direct payment for soybeans (1986-2007): payment based on the quantity of soybeans production within the production adjustments system decided by the government. Payments rate is fixed. This transfer is included in the soybean SCT (Table 3.3). Use of labels: Production and payment limits: NO; Variable payment rates: NO; Input constraints: NO.

Soybeans producer management stabilization programme (2000-2007): payment based on the quantity of soybeans production under management stabilization programme. This transfer is included in the soybean SCT (Table 3.3). Use of labels: Production and payment limits: NO; Variable payment rates: YES (Payments rate is variable depending on current price level); Input constraints: NO.

Payments for manufacturing milk (1986-Present): budgetary expenditure under the new "*Temporary Law for Compensation Prices for Producers of Milk for Manufacturing Purposes*", introduced in 2001, to compensate dairy farmers for manufacturing milk. This transfer is included in the milk SCT (Table 3.6). Use of labels: Production and payment limits: YES (Eligible producer has to comply with the production plan prepared by the producer's organization); Variable payment rates: NO; Input constraints: YES (Mandatory).

Milk producer management stabilization programme (2004-2006): payment based on the quantity of milk production under management stabilization programme. This transfer is included in the milk SCT (Table 3.6). Use of labels: Production and payment limits: YES (Eligible producer has to comply with the production plan prepared by the producer's organization); Variable payment rates: YES (Payments rate is variable depending on current price level); Input constraints: NO.

Direct payments for core farmers (wheat, barley, soybean, sugar beet, starch potato, buckwheat, and rapeseed) (2007-Present): output based component of the direct payments for core farmers under the "*The law on farm income stabilization*", came into effect on 1 April 2007. The payment rate is differentiated based on the product quality. These transfers are included in the wheat, barley, soybean and Sugar SCTs (Tables 3.1 to 3.3, 3.5 and 3.11). Use of labels: Production and payment limits: NO; Variable payment rates: NO; Input constraints: YES (Mandatory)

Sugar cane farm income stabilization program (2007-Present): payment based on the quantity of sugar cane production. The payment rate is differentiated based on the product quality. This transfer is included in the sugar SCT (Table 3.5).Use of labels: Production and payment limits: NO; Variable payment rates: NO; Input constraints: YES (Mandatory)

Starch potato farm income stabilization program (2007-Present): payment based on the quantity of sweet potato production for starch processing. The payment rate is differentiated based on the product quality. This transfer is included in the sugar SCT (Table 3.11). Use of labels: Production and payment limits: NO; Variable payment rates: NO; Input constraints: YES (Mandatory)

Direct payments for beef farmers (2010-Present): This program includes two payments: payments for breeding and feeding cattle farms. The payment for breeding cattle farms is given when the calf price falls below the trigger base price that is set to cover production cost including 80% of family labour cost. The payment rate is determined quarterly by three types of calves (Japanese Black, Japanese Brown, and other beef breeds) to compensate 75% of the difference between the trigger base price and quarterly average calf price. The payments for feeding cattle farms also compensate 80% of the difference between average production cost (including family labour cost) and current revenue from the mutual fund where the government contribute 75%. The payment rate is announced every month by the type of cattle (beef breeds, cross breeds and dairy breeds). These transfers are included in the beef SCT (Tables 3.7). Use of labels: Production and payment limits: NO; Variable payment rates: YES (payment and its rate depends on quarterly average prices; Input constraints: YES (Mandatory).

Direct payments for hog farmers (2010-Present): The payments for pig farms compensate 80% of the difference between average production cost (including family labour cost) and current revenue from the mutual fund where the government contribute 50%. The payment rate per head is set quarterly. These transfers are included in the pig meat SCT (Tables 3.7). Use of labels: Production and payment limits: NO; Variable payment rates: YES (payment and its rate depends on quarterly average prices; Input constraints: YES (Mandatory) .

Production promotion of cheese (2017-Present): payment per kg of milk used to produce cheese. This transfer is included in the milk SCT (Table 3.6). Use of labels: Production and payment limits: NO; Variable payment rates: NO; Input constraints: YES (Mandatory) .

B. Payments based on input use

B.1. Variable input use

Interest concessions (1986-Present): Budgetary expenditure on the Government and quasi-government loan programmes to provide low interest loans for purchasing variable inputs, estimated as half of the total expenditure [the other half being for purchasing fixed inputs and included under B2]. This transfer is included in ACT. Use of labels: Production and payment limits: NO; Variable payment rates: NO; Input constraints: YES (Mandatory) .

Fuel tax concession (2006-Present): A value of foregone fuel tax in agricultural use. Tax is imposed on oil selling company. The value is estimation made by Ministry of Agriculture, Forestry and Fisheries. This transfer is included in ACT. Use of labels: Production and payment limits: NO; Variable payment rates: NO; Input constraints: NO.

B.2 Fixed capital formation

Infrastructure (National (1986-Present) and Sub-national (2007-Present)): budgetary expenditure on the on-farm infrastructure improvement scheme, including irrigation and drainage facilities and readjustment of agricultural land. This transfer is included in ACT. Use of labels: Production and payment limits: NO; Variable payment rates: NO; Input constraints: NO.

Disaster restoration (National (1986-Present) and Sub-national (2007-Present)): budgetary expenditure on the on-farm basis disaster restoration program. This transfer is included in ACT. Use of labels: Production and payment limits: NO; Variable payment rates: NO; Input constraints: NO.

Interest concessions (2006-Present): budgetary expenditure on the Government and quasi-government loan programmes to provide low interest loans, half of the total expenditure is attributed to loans for purchasing variable inputs.[the other half is attributed to loans for purchasing fixed inputs, listed under B2]. This transfer is included in ACT. Use of labels: Production and payment limits: NO; Variable payment rates: NO; Input constraints: YES (Mandatory) .

Setting-up of young farmers (2012-Present): budgetary expenditure on the income support to new young farmers during the initial operation period. This transfer is included in ACT. Use of labels: Production and payment limits: NO; Variable payment rates: NO; Input constraints: NO.

B.3. Based on use of on-farm services

Extension services (National (1986-Present) and Sub-national (2007-Present)): budgetary expenditure on advisory services. This transfer is included in ACT. Use of labels: Production and payment limits: NO; Variable payment rates: NO; Input constraints: NO.

Pest and disease control (1986-Present): budgetary expenditure on the animal health control scheme. This transfer is included in GCT for all livestock. Use of labels: Production and payment limits: NO; Variable payment rates: NO; Input constraints: NO.

C. Payments based on current area planted/animal numbers/revenues/incomes

Direct payment for rice (2004-2010): payments based on area of forage rice production under rice production adjustments system. This transfer is included in the rice SCT (Table 3.1). Use of labels: Production and payment limits: NO; Variable payment rates: NO; Input constraints: NO.

Rice farmer management support (2005-2007): payments for rice producer based on their productivity. This transfer is included in the rice SCT (Table 3.1). Use of labels: Production and payment limits: YES (Eligible producer has to participate in diversion programme); Variable payment rates: YES (Payments rate is variable depending on current price level); Input constraints: NO.

Direct payment for wheat, barley and soybeans (2004-2007): payments based on area in order to support producing high quality wheat, barley and soybeans under rice production adjustments system. This transfer is included in the GCT (wheat, soybean and barley). Use of labels: Production and payment limits: NO; Variable payment rates: NO; Input constraints: NO

Direct payment for environmentally friendly farming (2007-2011): payments based on area in order to support the group of farmers who adopt the environmentally friendly farming practices. This transfer is included in the GCT (farm crops). Use of labels: Production and payment limits: NO; Variable payment rates: NO; Input constraints: YES (voluntary, eligible producer has to be certified as eco-farmer, respect the environmental farming principle, and reduce the application of chemical fertilizer and pesticide by half compared to the conventional farming practice in the region).

New direct payment for environmentally friendly farming (2011-Present): payments based on area in order to support farmers or the group of farmers who adopt the farming practices which address global warming effects and increase biodiversity. This transfer is included in the GCT (farm crops). Use of labels: Production and payment limits: NO; Variable payment rates: NO; Input constraints: YES (Vuluntary, eligible producer has to respect the environmental farming principle, reduce the application of chemical fertilizer and pesticide by half compared to the conventional farming practice in the region, and adopt farming practices that address global warming and increase biodiversity. In 2018, producers' compliance with Good Agricultural Practice is added for the requirement to receive the payment).

Direct payments for core farmers (income-based payment) (2008-Present): income stabilization component of the direct payments for core farmers under the "*The law on farm income stabilization*", came into effect on 1 April 2007. The payment compensates 90% of the loss of revenue from rice, wheat, barley, soybean, sugar beet and starch potato production relative to the standard income. This transfer is included in the GCT (arable crops). Use of labels: Production and payment limits: YES (production limit to rice production); Variable payment rates: YES (Payments is variable depending on current revenue); Input constraints: YES (Mandatory).

Rice Farm Income Support (fixed rate) (2010-2018): The payments are based on the current area of rice production. This is a predetermined (fixed rate) component of the rice income support payment. This transfer is included in the rice SCT (Table 3.1).Use of labels: Production and payment limits: YES (production limit to rice production); Variable payment rates: NO (Payment rate is predetermined); Input constraints: NO.

Rice Farm Income Support (variable rate) (2011-2013): The payments are based on the current area of rice production. This is a price contingent (variable rate) component of the rice income support payment. The payment triggers when average producer price of current crop year fell below the average of three consecutive crop years from 2006 to 2008. This transfer is included in the rice SCT (Table 3.1). Use of labels: Production and payment limits: YES (production limit to rice production); Variable payment rates: YES (Payment rate is price contingent); Input constraints: NO.

Direct payment for dairy farmers (environmentally friendly farming) (2010-Present): payments based on area in order to support dairy farmers who produce plants for feed and adopt environmentally friendly farming method. This transfer is included in the milk SCT (Table 3.1). Use of labels: Production and payment limits: NO; Variable payment rates: NO; Input constraints: YES (Mandatory).

Direct payment for rice farmers (feed rice and rice flour) (from 2014): payments based on area of feed rice and rice flour production. The payment rate is varied based on the production quantity. This transfer is included in the rice SCT (Table 3.1). Use of labels: Production and payment limits: NO; Variable payment rates: YES; Input constraints: NO.

Direct payment for core farmers (current area payment) (from 2015): This payment is the revision of "Direct payments for core farmers (non-current area payment) (2007-2014)". The payment is based on current area planted, instead of past area, since 2015. Use of labels: Production and payment limits: NO; Variable payment rates: NO; Input constraints: YES (Mandatory).

Insurance (1986-Present): The insurance is available for a range of products (rice, wheat, barley, livestock commodities, fruit, field crops, silkworms). This voluntary programme mainly covers yield losses due to natural disaster but some products are also insured against deterioration of crop quality and production equipment (e.g. livestock or agricultural greenhouse). This transfer is included in ACT. Use of labels: Production and payment limits: NO; Variable payment rates: YES; Input constraints: NO.

Revenue insurance programme (2018-Present): This programme insures total farm revenue, both taking into account the market volatility and yield fluctuations that occur during insured year. All agricultural commodities are covered with the exceptions of beef cattle, veal calves, hogs, and eggs. The revenue is calculated at farm level rather than regional level or by commodity. The benchmark revenue is calculated based on the average of the last five years for each farmer. If the revenue during the insured period falls below 90% of its benchmark, the farmers can be compensated up to 90% of the revenue loss relative to the benchmark. The participation to the programme is voluntary.Use of labels: Production and payment limits: NO; Variable payment rates: YES; Input constraints: NO.

D. Payments based on non-current area planted/animal numbers/revenues/incomes – production required

E. Payments based on non-current area planted/animal numbers/revenues/incomes – production not required

Payments to farmers in hilly and mountainous areas (2000-Present): payments per hectare to farmers who farm agricultural lands in certain naturally, economically and socially disadvantaged regions, designated by regional assistance laws and meeting certain objective criteria regarding the slope, shape or size. Although the prescribed land is intended for farming, producers are not obliged to produce any commodities. Use of labels: Production and payment limit: YES (payment to individual cannot exceed JPY one million); Variable payment rates: NO; Input constraints: NO; Production exemption: NO.

Diversion programs (1986-Present): payment made under various diversion programmes, replaced by the *Production Adjustment Promotion Programme (PAPP)* in 1998. The PAPP was revised to new diversion programme in 2004. The new programme is applied to the area of paddy field where other uses than rice production was implemented. The producers must preserve a favorable environment of paddy fields. Use of labels: Production and payment limit: NO; Variable payment rates: NO; Input constraints: NO; Production exemption: YES (rice production is exempted).

Direct payments for core farmers (non-current area payment) (2007-2014): historical area component of the direct payments for core farmers under the "*The law on farm income stabilization*", came into effect on 1 April 2007. Use of labels: Production and payment limit: NO; Variable payment rates: NO; Input constraints: YES (Mandatory); Production exemption: NO.

F. Payments based on non-commodity criteria

F.1. Long-term resource retirement

F.2. Specific non-commodity output

F.3. Other non-commodity criteria

G. Miscellaneous payments

III.2 Percentage PSE [100 x (III.1) / ((I) + (Sum of A2 to G))]

III.3 Producer NPC: For all agricultural commodities the producer NPC is estimated as a weighted average of the producer NPC calculated for the individual MPS commodities and shown in Table 4. For each commodity Producer NPC = [domestic price received by producers (at the farm gate) + unit payments based on output] / border price (also at the farm gate).

III.4 Producer NAC [1 / (100 - (III.2)) x 100]

IV. General Services Support Estimate (GSSE): total budgetary expenditure to support general services provided to agriculture [Sum of H to M].

H. Agricultural knowledge and innovation system

H.1. Agricultural knowledge generation: Budgetary expenditure on research institutions.

H.2. Agricultural knowledge transfer:
H.2.a.education: Budgetary expenditure on trainee support.
H.2.b.extension services: Budgetary expenditure on agricultural extension services, technical assistance and training to farmers. Sub-national payment is included from 2007.

I. Inspection and control

I.1. Agricultural product safety and inspection: Budgetary expenditure on inspection and control services.

I.2. Pest and disease inspection and control: Budgetary expenditure on pest and disease control services (off farm).

I.3. Input control: Budgetary expenditure on certification and control services.

J. Development and maintenance of infrastructure

J.1. Hydrological infrastructure: Budgetary expenditure under the off-farm hydrological infrastructure improvement scheme, including for irrigation and drainage facilities, and for the restorations of off-farm equipment under the disaster restoration programme. Sub-national payment is included from 2007.

J.2. Storage, marketing and other physical infrastructure: Budgetary expenditure under the off-farm infrastructure improvement scheme, including for natural disaster prevention measures, road construction, sewerage construction, public health and recreational facilities construction. Sub-national payment is included from 2007.

J.3. Institutional infrastructure

J.4. Farm restructuring: Budgetary expenditure on farm consolidation and for early retirement of farmers under the pension scheme.

K. Marketing and promotion

K.1. Collective schemes for processing and marketing: Budgetary expenditure on marketing of domestic production.

K.2. Promotion of agricultural products: Budgetary expenditure on promotion of domestic production.

L. Cost of public stockholding: Budgetary expenditure on public stockholding of rice, wheat, soybeans and feed grains.

M. Miscellaneous

V.1 Consumer Support Estimate (CSE): Associated with agricultural production, i.e. for the quantities of commodities domestically produced, excluding the quantities used on-farm as feed -- excess feed cost. [Sum of N to Q; when negative, the amounts represent an implicit tax on consumers].

N. Transfers to producers from consumers: Associated with market price support on all domestically produced commodities, estimated by increasing the transfers calculated for the MPS commodities according to their share in the total value of production [(N.1) / (I.1) x 100].

N.1. Of which MPS commodities: Sum of the values of transfers from consumers to producers associated with market price support for the MPS commodities as calculated in Tables 4.1 to 4.19.

O. Other transfers from consumers: Transfers to the budget associated with market price support on the quantities imported of domestically produced commodities, estimated by increasing the transfers calculated for the MPS commodities according to their share in the total value of production [(O.1) / (I.1) x 100].

O.1. Of which MPS commodities: Sum of the transfers to the budget associated with market price support on the quantities imported of the MPS commodities as calculated in Tables 4.1 to 4.19.

P. Transfers to consumers from taxpayers

P.1. Commodity specific transfers to consumers: Sum of commodity specific transfers from taxpayers to consumers (farm gate level) from Tables 4.13, including:

School lunch scheme: budgetary expenditure under the programme for the promotion of rice and milk consumption in schools. The budget data by commodity is available.

P.2. Non-commodity specific transfers to consumers: Sum of non-commodity specific transfers from taxpayers to consumers

Q. Excess Feed Cost: Associated with market price support on quantities of domestically produced crops and used on-farm as feed as calculated (Sum of *Excess Feed Cost* in the MPS Tables 4.13).

V.2 Percentage CSE [100 x (V.1) / ((II) + (P))]

V.3 Consumer NPC: For all agricultural commodities the consumer NPC is estimated as a weighted average of the consumer NPC calculated for the individual MPS commodities and shown in Table 2. For each commodity consumer NPC = domestic price paid by consumers (at the farm gate)/ border price (also at the farm gate).

V.4 Consumer NAC [(1 / (100 -(V.2)) x 100]

VI. Total Support Estimate [(III.1) + (IV) + (P)] and [(R) + (S) - (T)]

R. Transfers from consumers [(N)+(O)]

S. Transfers from taxpayers [(III.1)-(N)+(IV)+(P)]

T. Budget revenues [(O)]

TABLE 2. Japan: Breakdown of PSE by commodity specificity and other transfers

All data sets in Table 2 to come from Tables 1 and 3.1 to 3.20 where definitions are included.

Definitions:

I. Producer Single Commodity Transfers (producer SCT): the annual monetary value of gross transfers from consumers and taxpayers to agricultural producers, measured at the farm level, arising from policy measures directly linked to the production of a single commodity such that the producer must produce the designated commodity in order to receive the payment. This includes policies where payments are specified on a per-commodity basis [Sum of SCTs for individual commodities from Tables 3.1-3.20].

Percentage producer SCT: is the commodity SCT expressed as a share of gross farm receipts for the specific commodities (including support in the denominator). This indicator can be expressed for the total SCT (Table 2), or for a specific commodity (Table 3.1 to 3.20).

$\%SCT = 100* SCT / (\text{Value of production}_{COM} + A.2_{COM} + B_{COM} + C_{COM} + D_{COM})$

Share in Total PSE (%): $SCT_{SHARE} = 100* SCT / PSE$

II. Group commodity transfers (GCT): the annual monetary value of gross transfers from consumers and taxpayers to agricultural producers, measured at the farm gate level, arising from policy measures whose payments are made on the basis that one or more of a designated list of commodities is produced. That is, a producer may produce from a set of allowable commodities and receive a transfer that does not vary with respect to this decision [$GCT = B_{GROUP} + C_{GROUP} + D_{GROUP}$].

Share in Total PSE (%): $GCT_{SHARE} = 100* GCT / PSE$

Transfers to specific groups of commodities: the GCT indicator is calculated for Japan for the following groups of commodities: All crops, all arable crops, all livestock and wheat, barley and soybean.

III. All commodity transfers (ACT): the annual monetary value of gross transfers from consumers and taxpayers to agricultural producers, measured at the farm gate level, arising from policy measures that place no restrictions on the commodity produced but require the recipient to produce some commodity of their choice [$ACT = C_{ALL} + B_{ALL} + D_{ALL}$].

Share in Total PSE (%): $ACT_{SHARE} = 100* ACT / PSE$

IV. Other Transfers to Producers (OTP): the annual monetary value of gross transfers made under policies that do not fall in the above three cases (SCT, GCT, ACT). That is, payments that do not require any commodity production at all. [$OTP = E + F + G$]

Share in Total PSE (%): $OTP_{SHARE} = 100* OTP / PSE$

V. Total PSE: $PSE = A + B + C + D + E + F + G = SCT + GCT + ACT + OTP$

Percentage PSE: $\%PSE = 100*PSE / (\text{Total Value of Production at farm gate} + A.2. + B + C + D + E + F + G)$

TABLE 3. Japan: Producer Single Commodity Transfers (by commodity)

Tables 3.1 to 3.20, provide information on Producer Single Commodity Transfers (PSCT) for the following commodities: wheat, maize, other grains, sunflower, sugar beet, milk, beef, pigmeat, poultry, eggs and "other commodities". All data sets in the calculation SCT by commodity come from Tables 1 and 4.1 – 4.20 where definitions are included.

Definitions:

I. Level of production: Data from respective commodity Tables 4.1 – 4.20 (Market Price Support tables)

II. Value of production (at farm gate): Data for respective commodity Tables 4.1 – 4.20 (Market Price Support tables)

III. Producer Single Commodity Transfers: Sum of transfers to respective single commodity in categories A, B, C and D.

A. Support based on commodity output

A1. Market Price Support [Data for respective commodity from Table 4]

A2. Payments based on output

Payments based on output (A.2) provided to respective single commodity [Data from Table 1]

B. Payments based on input use, single commodity [$B.1_{COM} + B.2_{COM} + B.3_{COM}$]

B1. Based on variable input use

Payments based on variable input use ($B.1_{COM}$) provided to respective single commodity [Data from Table 1].

B2. Based on Fixed capital formation

Payments based on fixed capital formation ($B.2_{COM}$) provided to respective single commodity [Data from Table 1].

B3. Based on on-farm services

Payments based on on-farm services ($B.3_{COM}$) provided to respective single commodity [Data from Table 1].

C. Payments based on current A/An/R/I, production required, single commodity

Payments based on current A/An/R/I (C_{COM}) provided to respective single commodity [Data from Table 1].

D. Payments based on non-current A/An/R/I, production required, single commodity

Payments based on non-current A/An/R/I, production required (D_{COM}) provided to respective single commodity [Data from Table 1].

IV. Percentage producer SCT : %SCT $=100*(III) / ((II) + (A.2) + (B_{COM}) + .(C_{COM}). + .(D_{COM}))$

TABLE 4. Japan: Market Price Support and Consumer Single Commodity Transfers

Tables 4.1 to 4.20, contain calculation of the Market Price Support (MPS) and Consumer Single Commodity Transfers (consumer SCT) for the following commodities: wheat, barley, rice, refined sugar, soybean, milk, beef and veal, pigmeat, poultry meat, eggs, apples, cabbage, cucumbers, grapes, mandarins, pears, spinach, strawberries, welsh onion and "other commodities". The data sets used in calculation of the MPS and consumer SCT by commodity are described below. Values for "other commodities" are derived using information on total Market Price Support and Value of Production, and individual commodity data.

Definitions:

Wheat

I. Level of production

Total production of common wheat.

Source: MAFF, "Sakumotsu Tokei Sokuho" (Crop Statistics).

II. Producer prices (at farm gate)

Government purchase price of the first grade for 1986, the first grade of new group II from 1987 to 1999, and weighted average of contract prices for all grades from 2000, excluding packing charge.

Source:

MAFF, "Bakka ni Kansuru Shiryo" (Statistics on Wheat and Barley).

MAFF, "Bei Bakka ni Kansuru Shiryo" (Statistics on Rice, Wheat and Barley).

III. Value of production (at farm gate) [(I)*(II)]

IV. Trade status

Net imported commodity.

Source: Ministry of Finance, "Nihon Boeki Geppyo" (Japan imports and exports)

V. Market price differential at the farm gate [(II) − (VI)]

Price gap (between producer price and reference price) method is applied for 1979-2006. Marketing margin from farm gate to the market is assumed to be the same as that from border to the market. Market price differential is set to zero since 2007 as no price-related policies in place.

VI. Reference prices (at farm gate)

Weighted average of government purchase price of imported wheat for food use and imported wheat for feed use for 1986-2002. Weighted average of government purchase price of imported wheat for food use and the price of simultaneous buy and sell transaction of wheat for feed from 2003 to 2006. Reference price is producer price since 2007.

Sources: MAFF, "Bei Bakka ni Kansuru Shiryo" (Statistics on Rice, Wheat and Barley).

VII. Level of consumption (at farm gate)

Total domestic consumption of wheat for food and feed use.

Source: MAFF, "Shokuryo Jukyuhyo" (Food Balance Sheet).

VIII. Consumption prices (at farm gate)

Implicit prices corresponding to producer prices minus the unit value of market transfers.

IX. Value of consumption (at farm gate) [(VII)*(VIII)]

Barley

I. Level of production

Total production of six-row barley, two-row barley and naked barley, including for beer use.

Source: MAFF, "Sakumotsu Tokei Sokuho" (Crop Statistics).

II. Producer prices (at farm gate)

Weighted average price for beer and other uses. Price for beer use is the Government notice price. Price for other uses is the Government purchase price of the first grade of group 2 in 1986 and the first grade of new group II from 1987 to 1999, weighted average of four grades including contract prices of three grades and price calculated by using agricultural price index for beer use barley from 2000, excluding packing charge.

Source:

MAFF, "Bakka ni Kansuru Shiryo" (Statistics on Wheat and Barley).

Government notice price for beer use, MAFF, Agricultural Production Bureau.

MAFF, "Bei Bakka ni Kansuru Shiryo" (Statistics on Rice, Wheat and Barley).

III. Value of production (at farm gate) [(I)*(II)]

IV. Trade status

Net imported commodity.

Source: Ministry of Finance, "Nihon Boeki Geppyo" (Japan imports and exports)

V. Market price differential at the farm gate [(II) － (VI)]

Price gap (between producer price and reference price) method is applied. Marketing margin from farm gate to the market is assumed to be the same as that from border to the market.

VI. Reference prices (at farm gate)

Weighted average of average Government purchase price of "Australian two-row barley" for food use, feed use and other use (malt). For 1987-1990 the price of food use is estimated based on Australian barley FOB prices, since no data has been available.

Sources:

Ministry of Finance, "Nihon Boeki Geppyo" (Japan imports and exports).

MAFF, "Bei Bakka ni Kansuru Shiryo" (Statistics on Rice, Wheat and Barley).

FOB of Australian Barley, ABARE, "Agriculture and Resources Quarterly".

VII. Level of consumption (at farm gate)

Total domestic consumption of barley for food, feed and malt use.

Source: MAFF, "Shokuryo Jukyuhyo" (Food Balance Sheet).

VIII. Consumption prices (at farm gate)

Implicit prices corresponding to producer prices minus the unit value of market transfers.

IX. Value of consumption (at farm gate) [(VII)*(VIII)]

Rice

I. Level of production

Total production of rice. Husked basis.

Source: MAFF, "Shokuryo Jukyuhyo" (Food Balance Sheet)

II. Producer prices (at farm gate)

The average Government purchase price of the 1st and 2nd grade of the 1st to 5th group, including packing charge for 1986-1995, the average of the Government purchase price of domestic rice and the farm-gate price of voluntarily-marketed rice, weighted by the market quantity of each rice for 1996-2003, and the average producer price of ordinary cooking rice (husked basis, the first grade quality) since 2004 [2].

Source:

[1] MAFF, "Beika ni Kansuru Shiryo" (Statistics on Rice).

[2] MAFF, "Nougyou Bukka Toukei" (Agricultural price statistics)

III. Value of production (at farm gate) [(I)*(II)]

IV. Trade status

Net imported commodity.

Source: Ministry of Finance, "Nihon Boeki Geppyo" (Japan imports and exports)

V. Market price differential at the farm gate [(II) － (VI)]

Price gap (between producer price and reference price) method is applied. Marketing margin from farm gate to the market is assumed to be the same as that from border to the market.

VI. Reference prices (at farm gate)

-- For 1986-1995: import price estimated as follows: P * C * E / Q, where P = average Thai FOB price, C = transportation costs and the insurance adjustment coefficient (1.1), taken into account only when Japan is considered as an importer (1988-1991, 1993-1995), E = Exchange rate, Q = Quality adjustment coefficient (0.66) [1].
-- Since 1996: average import price of rice [2].

Sources:

[1] FOB, Thailand, Board of Trade.

[2] Ministry of Finance, "Nihon Boeki Geppyo" (Japan imports and exports).

VII. Level of consumption (at farm gate)

Total domestic consumption of rice. Husked basis.

Source: MAFF, "Shokuryo Jukyuhyo" (Food Balance Sheet).

VIII.   Consumption prices (at farm gate)

Implicit prices corresponding to producer prices minus the unit value of market transfers.

IX. Value of consumption (at farm gate) [(VII)*(VIII)]

Soybean

I.   Level of production

Total production of common soybean.

Source: MAFF, "Sakumotsu Tokei Sokuho" (Crop Statistics).

II. Producer prices (at farm gate)

Average producer price.

Source: MAFF, "Nougyou Bukka Toukei" (Agricultural price statistics)

III. Value of production (at farm gate) [(I)*(II)]

IV. Trade status

Net imported commodity.

Source: Ministry of Finance, "Nihon Boeki Geppyo" (Japan imports and exports)

V. Market price differential at the farm gate [(II) − (VI)]

Market price differential is set to zero as no price-related policies in place.

VI. Reference prices (at farm gate)

Reference price is producer price.

Sources:

VII. Level of consumption (at farm gate)

Total domestic consumption of soybena.

Source: MAFF, "Shokuryo Jukyuhyo" (Food Balance Sheet).

VIII. Consumption prices (at farm gate)

Implicit prices corresponding to producer prices minus the unit value of market transfers.

IX. Value of consumption (at farm gate) [(VII)*(VIII)]

Sugar

I. Level of production

Total production of beet sugar and cane sugar in refined equivalent. Productions of beet sugar and cane sugar in refined equivalent are calculated by multiplying production of sugar beet by sugar content (around 0.16-0.18, depending on year) and raw cane sugar by 0.955, respectively.

Source:

MAFF, "Sakumotsu Tokei Sokuho" (Crop Statistics).

Agriculture and Livestock Industries Corporation (ALIC).

II. Producer prices (at farm gate)

Weighted average of producer prices for sugar beet and sugar cane, estimated by MAFF.

Source:

MAFF, "Sakumotsu Tokei Sokuho" (Crop Statistics).

Industrial Sugar Refining Association, "Pocket Sato Tokei"(Statistics on Sugar).

III. Value of production (at farm gate) [(I)*(II)]

IV. Trade status

Net imported commodity.

Source: Ministry of Finance, "Nihon Boeki Geppyo" (Japan imports and exports)

V. Market price differential at the farm gate [(II) − (VI)]

Price gap (between producer price and reference price) method is applied. The conversion rate is applied to account for processing margin from raw to refined sugar.

VI. Reference prices (at farm gate)

Import price of sugar, in sugar crop equivalent, derived by dividing import price of refined sugar by conversion rate. The conversion rate is a ratio between back sales price of raw sugar by Agriculture and Livestock Industries Corporation and average producer prices of cane and beet [1, 16, 27].

Sources:

MAFF, "Sakumotsu Tokei Sokuho" (Crop Statistics).

Industrial Sugar Refining Association, "Pocket Sato Tokei"(Statistics on Sugar).

Agriculture and Livestock Industries Corporation (ALIC).

VII. Level of consumption (at farm gate)

Total domestic consumption of refined sugar.

Source: MAFF, "Shokuryo Jukyuhyo" (Food Balance Sheet).

VIII. Consumption prices (at farm gate)

Implicit prices corresponding to producer prices minus the unit value of market transfers.

IX. Value of consumption (at farm gate) [(VII)*(VIII)]

Milk

I. Level of production

Total production of drinking milk and fresh milk for processing.

Source: MAFF, "Shokuryo Jukyuhyo" (Food Balance Sheet).

II. Producer prices (at farm gate)

Average producer price of raw milk.

Source: MAFF, "Price indices of Commodities in Rural Areas".

III. Value of production (at farm gate) [(I)*(II)]

IV. Trade status

Net imported commodity.

Source: Ministry of Finance, "Nihon Boeki Geppyo" (Japan imports and exports)

V. Market price differential at the farm gate [(II) − (VI)]

Price gap (between producer price and reference price) method is applied. The processing margin is taken into account.

VI. Reference prices (at farm gate)

Border prices of butter and skimmed milk powder converted into a milk equivalent border price using technical coefficients minus a processing margin, calendar year. The border prices of butter and skimmed milk powder are the average import prices (cif prices) of butter and skimmed milk powder. The processing margin is calculated as a simple average of the processing margin for the four main exporting countries: Australia, EU, New Zealand and the United States..

Sources: Ministry of Finance, "Nihon Boeki Geppyo" (Japan imports and exports)

VII. Level of consumption (at farm gate)

Total domestic consumption of milk.

Source: MAFF, "Shokuryo Jukyuhyo" (Food Balance Sheet).

VIII.   Consumption prices (at farm gate)

Implicit prices corresponding to producer prices minus the unit value of market transfers.

IX. Value of consumption (at farm gate) [(VII)*(VIII)]

Beef and veal

I.   Level of production

Total production, carcass weight.

Source: MAFF, "Meat Statistics"

II. Producer prices (at farm gate) [(III)/(I)]

III. Value of production (at farm gate)

Total production value.

Source: MAFF, "Seisan Nogyo Shyotoku Tokei".

IV. Trade status

Net imported commodity.

Source: Ministry of Finance, "Nihon Boeki Geppyo" (Japan imports and exports)

V. Market price differential at the farm gate [(II) − (VI)]

Tariff method is applied as no price-related policies in place except for import tariff. Tariff is from HS code 0201.10000. Margin adjustment is not necessary for tariff method.

VI. Reference prices (at farm gate)

-- 1986-91: Australian manufacturing cow price, Queensland, for manufacturing segment, and for the non-manufacturing segment, US price of choice steers 1100-1300 lb., Nebraska, estimated yield factor of 62 per cent [1, 2, 3].
-- Since 1992: Import price estimated by using the tariff rate.
Sources:

[1] MAFF, "Shokuniku Ryutsu Tokei" (Meat Marketing Statistics)

[2] Australian Meat and Livestock Corporation.

[3] USDA.

VII. Level of consumption (at farm gate)

Total domestic consumption of meat, carcass weight.

Source:

MAFF, "Meat Statistics".

MAFF, "Shokuniku Ryutsu Tokei" (Meat Marketing Statistics).

VIII. Consumption prices (at farm gate)

Implicit prices corresponding to producer prices minus the unit value of market transfers.

IX. Value of consumption (at farm gate) [(VII)*(VIII)]

Pigmeat

I.   Level of production

Total production, carcass weight.

Source: MAFF, "Meat Statistics"

II.   Producer prices (at farm gate) [(III)/(I)]

III. Value of production (at farm gate)

Total production value.

Source: MAFF, "Seisan Nogyo Shyotoku Tokei".

IV. Trade status

Net imported commodity.

Source: Ministry of Finance, "Nihon Boeki Geppyo" (Japan imports and exports)

V. Market price differential at the farm gate [(II) － (VI)]

Price gap (between producer price and reference price) method is applied.

VI. Reference prices (at farm gate)

US wholesale price, carcass weight (1986-1994: Omaha, 1995-1997: Pork cut out No.2 and from 1998-2003: Barrows & Gilts, N base, l.e 2004-) plus the costs of transportations from US to Japan.

Sources: USDA, ERS. "Livestock, Dairy, and Poultry Outlook".

VII. Level of consumption (at farm gate)

Total domestic consumption of meat, carcass weight.

Source:

MAFF, "Meat Statistics"

MAFF, "Shokuniku Ryutsu Tokei" (Meat Marketing Statistics)

VIII.   Consumption prices (at farm gate)

Implicit prices corresponding to producer prices minus the unit value of market transfers.

IX. Value of consumption (at farm gate) [(VII)*(VIII)]

Poultry

I. Level of production

Total production, carcass weight.

Source: MAFF, "Meat Statistics"

II. Producer prices (at farm gate) [(III)/(I)]

III. Value of production (at farm gate)

Total production value.

Source: MAFF, "Seisan Nogyo Shyotoku Tokei".

IV. Trade status

Net imported commodity.

Source: Ministry of Finance, "Nihon Boeki Geppyo" (Japan imports and exports)

V. Market price differential at the farm gate [(II) − (VI)]

Tariff method is applied as no price-related policies in place except for import tariff. Average tariff rate of HS codes 0207.13100 and 0207.10000, weighted by import value, is used. Margin adjustment is not necessary for tariff method.

VI. Reference prices (at farm gate)

Import price estimated by using the weighted average of tariff rates of "legs with bone" and "boneless and others" [9, 11].

Sources:

VII. Level of consumption (at farm gate)

Total domestic consumption of meat, carcass weight [3,17].

Source:

VIII. Consumption prices (at farm gate)

Implicit prices corresponding to producer prices minus the unit value of market transfers.

IX. Value of consumption (at farm gate) [(VII)*(VIII)]

Eggs

I.   Level of production

Total production of eggs.

Source: MAFF, "Keiran Shyokucho Ryutsu Tokei" (Egg and Poultry Marketing Statistics).

II.   Producer prices (at farm gate)

Average producer price.

Source: MAFF, "Nougyou Bukka Toukei" (Agricultural price statistics)

III. Value of production (at farm gate) [(I)*(II)]

IV. Trade status

Net imported commodity.

Source: Ministry of Finance, "Nihon Boeki Geppyo" (Japan imports and exports)

V. Market price differential at the farm gate [(II) － (VI)]

Tariff method is applied as no price-related policies in place except for import tariff. Tariff is from HS code 0407.21000. Margin adjustment is not necessary for tariff method.

VI. Reference prices (at farm gate)

Import price estimated by using the tariff rate.

VII. Level of consumption (at farm gate)

Total domestic consumption of eggs.

Source: MAFF, "Keiran Shyokucho Ryutsu Tokei" (Egg and Poultry Marketing Statistics).

VIII.   Consumption prices (at farm gate)

Implicit prices corresponding to producer prices minus the unit value of market transfers.

IX. Value of consumption (at farm gate) [(VII)*(VIII)]

Cabbage

I. Level of production [(III)/(II)]

II. Producer prices (at farm gate)

Average price received by farmers.

Source:

MAFF, "Yasaiseisansyukka Toukei"

MAFF, "Nourinnsuisann toukei geppou" (Monthly statistics of agriculture forestry &fisheries).

III. Value of production (at farm gate)

Total production value.

Source: MAFF, "Yasaiseisansyukka Toukei".

IV. Trade status

Net imported commodity.

Source: Ministry of Finance, "Nihon Boeki Geppyo" (Japan imports and exports)

V. Market price differential (at farm gate)

$$MPD = \text{Max}\left[PP \cdot (WP - QA \cdot CIF)/WP, PP - PP/(1 + tariff)\right] \text{ if } WP > PP,$$

$$= \text{Max}\left[PP - CIF \cdot QA \cdot (1 - MG), PP - PP/(1 + tariff)\right] \text{ if } WP \leq PP,$$

where PP is producer price [(II)], WP is the wholesale price of domestic product [1], QA is a quality adjustment, CIF is import CIF price [2], $tariff$ is import tariff rate, and MG is the margin from farm gate to markets (presented in % relative to market price) [3]. The function Max[a, b] returns the largest value within the bracket. See 2018 edition of this note (cookbook) for the detail.

For vegetables (Cabbage, Cucumbers, Spinach, and Welsh onions), $QA = WP/WP_{import}$, where WP_{import} is the wholesale price of imported product [1]. Five-year averages of QA, weighted by import volume, are used for years where data are missing or unreliable due to small import volumes (< 100 tonnes) to avoid strong fluctuations. For fruit products (Apples, Grapes, Mandarins, Pears, and Strawberries), QA is set equal to 1 (i.e. no quality adjustment is made) as wholesale prices are not available for imported products.

Import CIF price is derived with following HS codes. Apples: 0808.10000, Cabbage: 0704.90000 (1986 - 93) or 0704.90090 (1994 and afterwards), Cucumbers: 0707. 00000, Grapes: 0806.10000, Mandarins: 0805.20000, Pears: 0808.20000, Spinach: 0709.70000, Strawberries: 0810.10000, and Welsh onions: 0703.90010.

Source:

[1] MAFF, "Seikabutsu Oroshiuri Shijo Chosa Hokoku" (Report of wholesale market of vegetables and fruits).

[2] Ministry of Finance, "Nihon Boeki Geppyo" (Japan imports and exports).

[3] MAFF, "Shokuhin Ryutsu Dankaibetsu Kakaku Keisei Chosa" (Food price at different stages of value chain).

VI. Reference prices (at farm gate) [(II) − (V)]

VII. Level of consumption (at farm gate)

Level of production plus net imports.

Source:

MAFF, "Seisan Nogyo Shyotoku Tokei".

Ministry of Finance, "Nihon Boeki Geppyo" (Japan imports and exports).

MAFF, "Nourinnsuisann toukei geppou" (Monthly statistics of agriculture forestry &fisheries).

VIII. Consumption prices (at farm gate)

Implicit prices corresponding to producer prices minus the unit value of market transfers.

IX. Value of consumption (at farm gate) [(VII)*(VIII)]

Cucumbers

I. Level of production [(III)/(II)]

II. Producer prices (at farm gate)

Average price received by farmers.

Source:

MAFF, "Yasaiseisansyukka Toukei"

MAFF, "Nourinnsuisann toukei geppou" (Monthly statistics of agriculture forestry &fisheries).

III. Value of production (at farm gate)

Total production value.

Source: MAFF, "Yasaiseisansyukka Toukei".

IV. Trade status

Net imported commodity.

Source: Ministry of Finance, "Nihon Boeki Geppyo" (Japan imports and exports)

V. Market price differential (at farm gate)

See Cabbage section.

VI. Reference prices (at farm gate) [(II) − (V)]

VII. Level of consumption (at farm gate)

Level of production plus net imports.

Source:

MAFF, "Seisan Nogyo Shyotoku Tokei".

Ministry of Finance, "Nihon Boeki Geppyo" (Japan imports and exports).

MAFF, "Nourinnsuisann toukei geppou" (Monthly statistics of agriculture forestry &fisheries).

VIII.   Consumption prices (at farm gate)

Implicit prices corresponding to producer prices minus the unit value of market transfers.

IX. Value of consumption (at farm gate) [(VII)*(VIII)]

Spinach

I.   Level of production [(III)/(II)]

II. Producer prices (at farm gate)

Average price received by farmers.

Source:

MAFF, "Yasaiseisansyukka Toukei"

MAFF, "Nourinnsuisann toukei geppou" (Monthly statistics of agriculture forestry &fisheries).

III. Value of production (at farm gate)

Total production value.

Source: MAFF, "Yasaiseisansyukka Toukei".

IV. Trade status

Net imported commodity.

Source: Ministry of Finance, "Nihon Boeki Geppyo" (Japan imports and exports)

V. Market price differential (at farm gate)

See Cabbage section.

VI. Reference prices (at farm gate) [(II) − (V)]

VII. Level of consumption (at farm gate)

Level of production plus net imports.

Source:

MAFF, "Seisan Nogyo Shyotoku Tokei".

Ministry of Finance, "Nihon Boeki Geppyo" (Japan imports and exports).

MAFF, "Nourinnsuisann toukei geppou" (Monthly statistics of agriculture forestry &fisheries).

VIII.   Consumption prices (at farm gate)

Implicit prices corresponding to producer prices minus the unit value of market transfers.

IX. Value of consumption (at farm gate) [(VII)*(VIII)]

Welsh onions

I.   Level of production [(III)/(II)]

II.   Producer prices (at farm gate)

Average price received by farmers.

Source:

MAFF, "Yasaiseisansyukka Toukei"

MAFF, "Nourinnsuisann toukei geppou" (Monthly statistics of agriculture forestry &fisheries).

III. Value of production (at farm gate)

Total production value.

Source: MAFF, "Yasaiseisansyukka Toukei".

IV. Trade status

Net imported commodity.

Source: Ministry of Finance, "Nihon Boeki Geppyo" (Japan imports and exports)

V. Market price differential (at farm gate)

See Cabbage section.

VI. Reference prices (at farm gate) [(II) − (V)]

VII. Level of consumption (at farm gate)

Level of production plus net imports.

Source:

MAFF, "Seisan Nogyo Shyotoku Tokei".

Ministry of Finance, "Nihon Boeki Geppyo" (Japan imports and exports).

MAFF, "Nourinnsuisann toukei geppou" (Monthly statistics of agriculture forestry &fisheries).

VIII.   Consumption prices (at farm gate)

Implicit prices corresponding to producer prices minus the unit value of market transfers.

IX. Value of consumption (at farm gate) [(VII)*(VIII)]

Apples

I.   Level of production [(III)/(II)]

II. Producer prices (at farm gate)

Average price of 'Fuji' received by farmers.

Source: MAFF, "Kajyuseisansyukka Toukei".

III. Value of production (at farm gate)

Total production value.

Source: MAFF, "Kajyuseisansyukka Toukei".

IV. Trade status

Net imported commodity. Though gross export value is greater than gross import value in some years, the net exports are not large compared to total production and thus this commodity is not classified as "net exported commodity".

Source: Ministry of Finance, "Nihon Boeki Geppyo" (Japan imports and exports)

V. Market price differential (at farm gate)

See Cabbage section.

VI. Reference prices (at farm gate) [(II) − (V)]

VII. Level of consumption (at farm gate)

Level of production plus net imports.

Source:

MAFF, "Seisan Nogyo Shyotoku Tokei".

Ministry of Finance, "Nihon Boeki Geppyo" (Japan imports and exports).

MAFF, "Nourinnsuisann toukei geppou" (Monthly statistics of agriculture forestry &fisheries).

VIII.   Consumption prices (at farm gate)

Implicit prices corresponding to producer prices minus the unit value of market transfers.

IX. Value of consumption (at farm gate) [(VII)*(VIII)]

Grapes

I.   Level of production [(III)/(II)]

II.   Producer prices (at farm gate)

Average price of 'Delaware' received by farmers.

Source: MAFF, "Kajyuseisansyukka Toukei".

III. Value of production (at farm gate)

Total production value.

Source: MAFF, "Kajyuseisansyukka Toukei".

IV. Trade status

Net imported commodity.

Source: Ministry of Finance, "Nihon Boeki Geppyo" (Japan imports and exports)

V. Market price differential (at farm gate)

See Cabbage section.

VI. Reference prices (at farm gate) [(II) − (V)]

VII. Level of consumption (at farm gate)

Level of production plus net imports.

Source:

MAFF, "Seisan Nogyo Shyotoku Tokei".

Ministry of Finance, "Nihon Boeki Geppyo" (Japan imports and exports).

MAFF, "Nourinnsuisann toukei geppou" (Monthly statistics of agriculture forestry &fisheries).

VIII.   Consumption prices (at farm gate)

Implicit prices corresponding to producer prices minus the unit value of market transfers.

IX. Value of consumption (at farm gate) [(VII)*(VIII)]

Mandarins

I.   Level of production [(III)/(II)]

II. Producer prices (at farm gate)

Average price of 'Unshu' received by farmers.

Source: MAFF, "Kajyuseisansyukka Toukei".

III. Value of production (at farm gate)

Total production value.

Source: MAFF, "Kajyuseisansyukka Toukei".

IV. Trade status

Net imported commodity.

Source: Ministry of Finance, "Nihon Boeki Geppyo" (Japan imports and exports)

V. Market price differential (at farm gate)

See Cabbage section.

VI. Reference prices (at farm gate) [(II) − (V)]

VII. Level of consumption (at farm gate)

Level of production plus net imports.

Source:

MAFF, "Seisan Nogyo Shyotoku Tokei".

Ministry of Finance, "Nihon Boeki Geppyo" (Japan imports and exports).

MAFF, "Nourinnsuisann toukei geppou" (Monthly statistics of agriculture forestry &fisheries).

VIII.   Consumption prices (at farm gate)

Implicit prices corresponding to producer prices minus the unit value of market transfers.

IX. Value of consumption (at farm gate) [(VII)*(VIII)]

Pears

I.   Level of production [(III)/(II)]

II. Producer prices (at farm gate)

Average price of 'Housui' received by farmers.

Source: MAFF, "Kajyuseisansyukka Toukei".

III. Value of production (at farm gate)

Total production value.

Source: MAFF, "Kajyuseisansyukka Toukei".

IV. Trade status

Net imported commodity. Though gross export value is greater than gross import value in some years, the net exports are not large compared to total production and thus this commodity is not classified as "net exported commodity".

Source: Ministry of Finance, "Nihon Boeki Geppyo" (Japan imports and exports)

V. Market price differential (at farm gate)

See Cabbage section.

VI. Reference prices (at farm gate) [(II) − (V)]

VII. Level of consumption (at farm gate)

Level of production plus net imports.

Source:

MAFF, "Seisan Nogyo Shyotoku Tokei".

Ministry of Finance, "Nihon Boeki Geppyo" (Japan imports and exports).

MAFF, "Nourinnsuisann toukei geppou" (Monthly statistics of agriculture forestry &fisheries).

VIII.   Consumption prices (at farm gate)

Implicit prices corresponding to producer prices minus the unit value of market transfers.

IX. Value of consumption (at farm gate) [(VII)*(VIII)]

Strawberries

I.   Level of production [(III)/(II)]

II. Producer prices (at farm gate)

Average price received by farmers.

Source: MAFF, "Kajyuseisansyukka Toukei".

III. Value of production (at farm gate)

Total production value.

Source: MAFF, "Kajyuseisansyukka Toukei".

IV. Trade status

Net imported commodity.

Source: Ministry of Finance, "Nihon Boeki Geppyo" (Japan imports and exports)

V. Market price differential (at farm gate)

See Cabbage section.

VI. Reference prices (at farm gate) [(II) − (V)]

VII. Level of consumption (at farm gate)

Level of production plus net imports.

Source:

MAFF, "Seisan Nogyo Shyotoku Tokei".

Ministry of Finance, "Nihon Boeki Geppyo" (Japan imports and exports).

MAFF, "Nourinnsuisann toukei geppou" (Monthly statistics of agriculture forestry &fisheries).

VIII.   Consumption prices (at farm gate)

Implicit prices corresponding to producer prices minus the unit value of market transfers.

IX. Value of consumption (at farm gate) [(VII)*(VIII)]

Annex: Revisions in Japan's PSE database in 2018

Japan's PSE database covers 9 fruits and vegetables (hereafter, F&V) (Table A.1), which account for 13% of the country's total production value, and 15% of its total market price support (MPS) of covered products. Thus, precise estimates of the MPS for F&V are crucial. For the 2018 Monitoring and Evaluation report, two improvements have been made relative to previous reports regarding marketing margins and quality adjustments for Japanese F&V. The abbreviations used in this annex are summarized in Table A.2.

Table A.1. The list of commodity

			MPS (bil. JPY)
WO	Welsh Onion		102
CC	Cabbage		75
GR	Grapes		65
MN	Mandarin		38
PR	Pears		34
AP	Apples		22
SW	Strawberries		15
CU	Cucumbers		4
SP	Spinach		3

Note: MPS is 2014-16 average.

Table A.2. The list of abbreviations

	Variables		Commodities
CIF	CIF price (import unit price)	F&V	Fruits and vegetables
MG	Margin	AP	Apples
MPD	Market price differential	CC	Cabbage
MPS	Market price support	CU	Cucumbers
PP	Producer price	GR	Grapes
PSE	Producer support estimate	MN	Mandarin
QA	Quality adjustment factor	PR	Pears
RP	Reference price	SP	Spinach
VP	Value of production	SW	Strawberries
WP	Wholesale price	WO	Welsh Onion

Margin adjustment

Currently, the following formula is applied for F&V to estimate a commodity's market price differential (MPD).

$$MPD \equiv PP - RP = \text{Max}\left[PP - CIF \cdot (1 - MG), PP - PP/(1 + tariff)\right]$$

where *PP* is the producer price, *RP* is the reference price, *CIF* is the CIF price (import unit value), *MG* is the margin from farm gate to markets (e.g. transportation and handling costs) presented in relative terms (%

relative to market price),[1] and *tariff* is the import tariff rate. The function Max[*a*, *b*] returns the largest value within the bracket. In most cases, the first of the two terms within the bracket, $PP - CIF \cdot (1 - MG)$, is applied.

However, the data on margins are weak. The margin data have not been updated for more than 10 years, but even after updating them, the data are missing for many years, or for some products, no margin data are available. Besides, data quality is low as margins are derived from questionnaire information from only between 10 and 20 sellers.

The PSE manual suggests that "*it may be more accurate in some cases to use wholesale prices to estimate the MPD than to adjust the border price to the farm gate when there is imperfect marketing margin data*" (OECD 2016, paragraph 129). Therefore, MPD is calculated using wholesale price as follows:

$$MPD = \mathrm{Max}\big[PP \cdot (WP - CIF)/WP, PP - PP/(1 + tariff)\big],$$

where *WP* is wholesale price of domestic product. A relative price gap is used here because an absolute price gap (i.e., *MPD* = *WP* − *CIF*) would result in negative reference prices (*RP* = *PP* − *MPD*) in some cases. This is also provided for in the manual: "*In some cases, it may be more reasonable to assume the equality of the price gap in relative terms*" (OECD 2016, paragraph 127).

The use of wholesale price data has advantages in terms of data availability and quality. The data are available for all products and years, and sample coverage is high (the top 80% of wholesalers in main markets such as Tokyo and Osaka are required to provide their monthly sales prices).

One caveat applies to using *WP* data. In rare cases (pear after 1997), the *WP* is smaller than the *PP*. The existence of marketing margins suggests that the *WP* should always be greater than the *PP* for a given product. A likely explanation for the negative price difference lies in the difference in quality: pear farmers sell their high quality products at local markets, not at wholesale markets. Therefore, if the *WP* is smaller than the *PP*, the original method is applied rather than the *WP* method.

Quality adjustment

According to the PSE manual, "(t)*he domestic market and border prices used to estimate the MPD should represent commodities/products of similar quality. Quality relates to such product attributes as size, colour, moisture level, protein, fat or oil content, degree of impurities, bacterial pollution, etc. Among other factors, these determine commodity prices and cause price differentials, which may emerge independently of price policies. The measured MPD should be free from the "noise" due to quality differences, so that the border price is comparable with the domestic price in terms of product quality.*" (OECD 2016, paragraph 158).

For four vegetable products (cabbage, cucumbers, spinach, and welsh onion), the Ministry of Agriculture, Forestry and Fisheries (MAFF) of Japan reports wholesale price of domestic products and imported products. As prices are measured at the same market level, if two products are exactly same in quality, prices should be the same. If there is price gap, it can be regarded as an indication of quality differences. In the statistics, net weights and the degree of processing (fresh products only) are the same for both domestic and import products. Note also that price gaps between domestic and imported products purely reflect consumers'

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[1] There are a couple of reasons to present margins in relative terms rather than absolute terms. First, a relative term is more robust to inflation and deflation. Second, an absolute term could result in negative RP. Third, a relative term allows for a positive correlation between (absolute) margin and market price, while an absolute term does not (margin is fixed). Margin is likely correlated with price levels, because if price increases, more farmers are able to sell their products at more distant markets by bearing more margins (i.e. more transportation costs).

preferences and are independent from agricultural policy such as tariffs. If products with same quality are sold at different prices, consumers would buy only cheaper products, and sellers have incentives to increase prices. Such arbitrage behaviours eliminate the price gaps between domestic and imported products no matter how much tariffs are imposed.

Figure A.1 shows the price ratios between domestic and import products for a set of vegetables. While there is no evidence for systematic price gaps for cabbage, cucumbers, and spinach, the domestic price of welsh onion is around two times higher than import price, and this relationship is stable over time. Miyagi et al. (2011) investigate the preference among Japanese consumers, and show that freshness is the most important attribute in purchasing welsh onion. Kiyono (2002) find similar results. Freshness affects various quality attributes such as appearance and chemical components of welsh onion (Hayashi et al. 1984). As Japan is an island nation surrounded by ocean, imported welsh onions are subject to much longer shipping time than domestic products, causing quality and price differences between domestic and import products.

Figure A.1. Domestic price relative to imported products
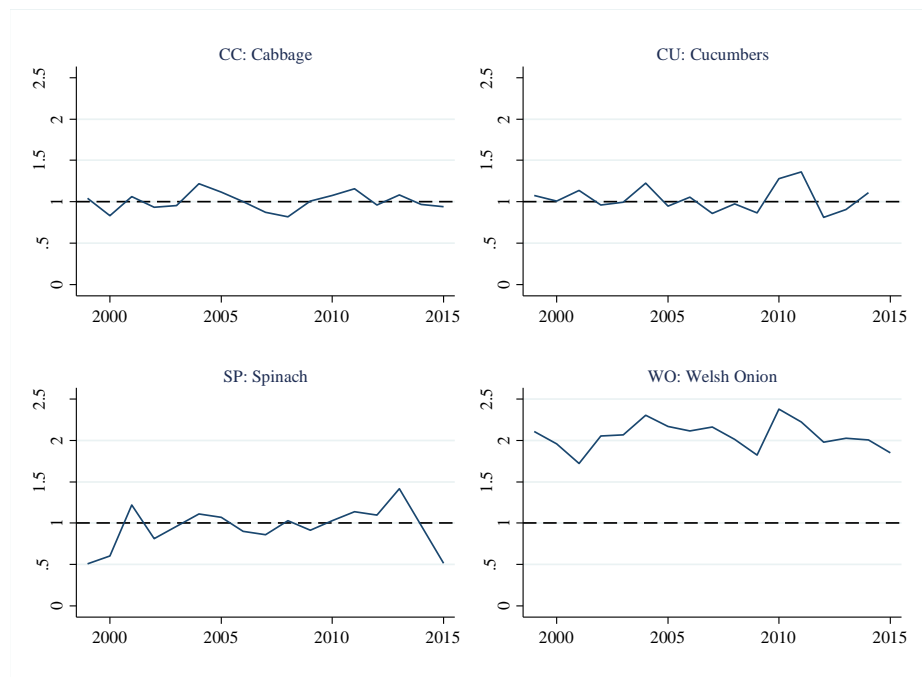
Note: The figure shows the ratio of domestic price and import price, measured at wholesale market.
Source: MAFF.

Summary

In summary, the revised *MPD* formula for covered F&V is given as

$$MPD = \text{Max}\left[PP \cdot (WP - QA \cdot CIF)/WP, PP - PP/(1 + tariff)\right] \text{ if } WP > PP,$$

$$= \text{Max}\left[PP - CIF \cdot QA \cdot (1 - MG), PP - PP/(1 + tariff)\right] \text{ if } WP \leq PP,\,[2]$$

where QA is a quality adjustment. For 4 vegetables, it is calculated as $QA = WP/WP_{import}$, where WP is the wholesale price of domestic product, and WP_{import} is the wholesale price of imported product. Five-year averages of QA, weighted by import volume, are used for years where data are missing or unreliable due to small import volumes (< 100 tonnes) to avoid strong fluctuations. For the five fruit products, QA is set equal to 1 (i.e. no quality adjustment is made) as wholesale prices are not available for imported products.

Box 1. Seasonality

The PSE manual (OECD 2016, Box 4.3) suggests that if there are seasonal tariffs, MPS should be estimated by season. Among the nine F&V, seasonal tariffs are applied only for grapes. Tariff rate is 17% from March to October, and 7.8% from November to February.

For grapes, the WP is always greater than PP. The MPD is thus calculated as $\text{Max}\left[PP \cdot (WP - QA \cdot CIF)/WP, PP - PP/(1 + tariff)\right]$. Therefore, the seasonal tariffs could directly affect the MPD if the later term within the bracket, $PP - PP/(1 + tariff)$, is applied. However, seasonal data for 2006-15 shows that the tariff method is not applied at all for this period. Then the question is whether WP method - the first term in the bracket, $PP \cdot (WP - QA \cdot CIF)/WP$ - should be applied by season. Using the same data to calculate the annual MPS from either seasonal or annual data, based on the WP method, shows that resulting MPS estimates of grapes are very similar for the two (3.7% difference on average, causing 0.8% point difference in the total MPS of nine F&V). On the other hand, calculating the MPS using seasonal data significantly increases the resource needs: monthly data on production, trade, and wholesale market are unavailable or difficult to obtain, especially for early years. The gain in the precision of the estimated MPS seems too small compared to its data and resource requirements. It was therefore decided not to consider seasonality for grapes.

Results

Unless otherwise noted, the results are compared by the protection rate, defined as MPD/PP, which is equivalent with MPS/VP. The results are derived using PSE database of 2017 Monitoring and Evaluation report.

Among the nine covered F&V, a strong reduction of the estimated protection rate is observed for welsh onions due to the quality adjustment (Figure A.2 and Table A.3). Cabbage also shows some lower estimates for most years due to the margin adjustment. In the original estimates, the margin amounts to 40% of the *PP*. However, *WP* is only 20% higher than *PP*, meaning that original margin data was strongly overestimated. Estimates for cucumbers also show some modest reductions in some years, albeit its impact on total *MPS* is small (Table A.1).

As a consequence, the estimate of the total MPS for these nine F&V is reduced by eight percentage-points on average, due to quality and margin adjustment (Figure A.3). MPS is stable over time around 20-30%,

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[2] This is only applied for pear after 1997. The change in calculation method around 1997 does not break continuity in time-series. The use of WP method in 1997 or before does not cause much difference compared to the original method (see Results section). Although the estimated MPD increased from JPY 32 (1993-97) to JPY 165 (1998-2002), it is mainly caused by a large decrease in CIF price (JPY 310 in 1993-97 to JPY 160 in 1998-2002).

which is consistent with the stable tariff level during the period represented. As a consequence, Japan's % PSE is reduced by 1.4 percentage-points on average.[3]

Figure A.2. Results by commodity
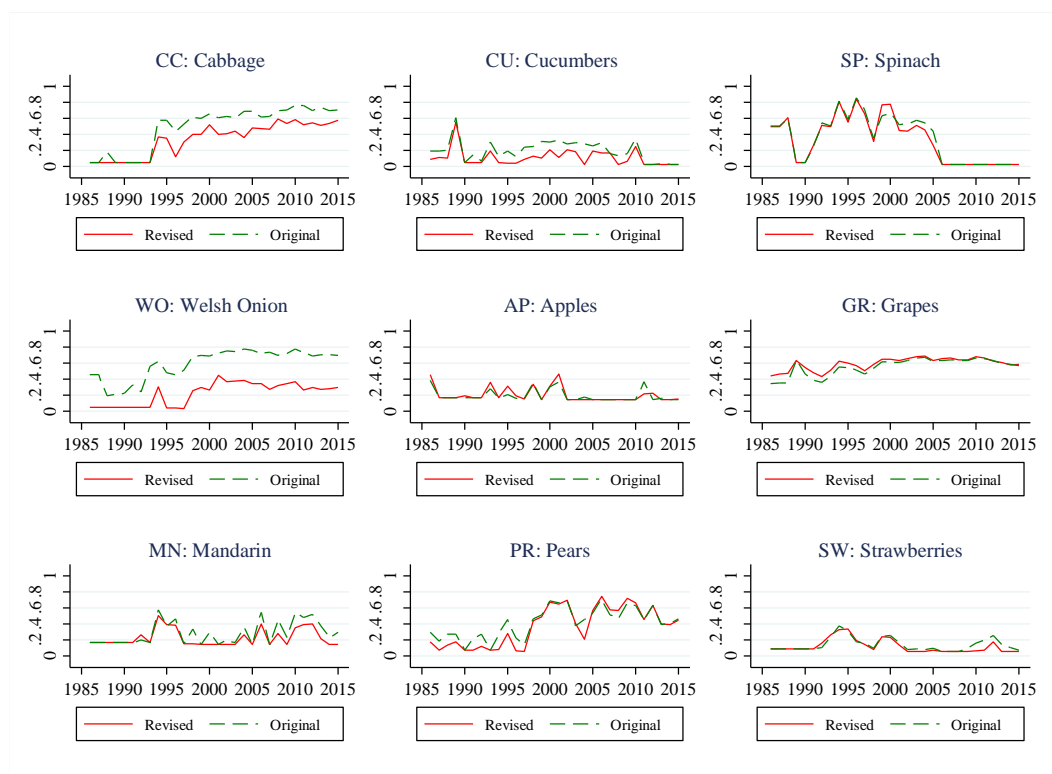
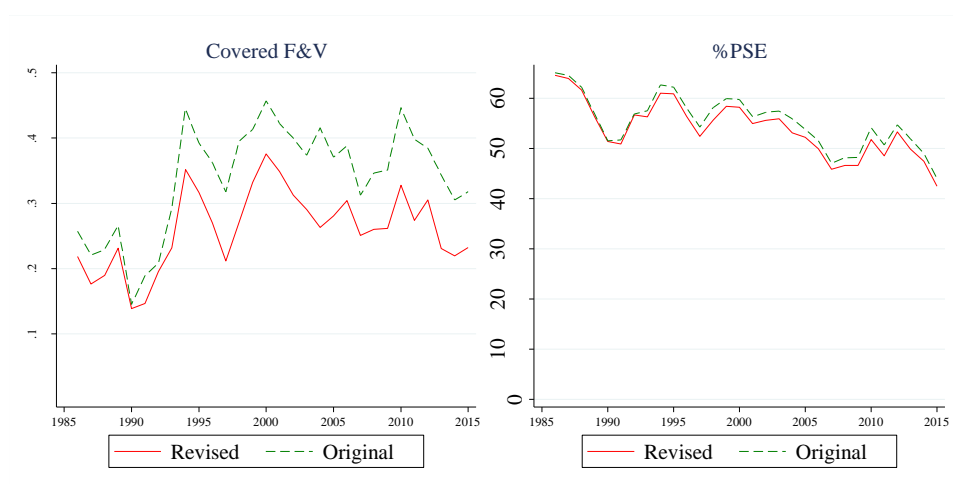*Note*: The *y*-axis shows *MPD*/*PP*, or equivalently, *MPS*/*VP*.

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[3] % PSE is the PSE as a share of gross farm receipts (including support). Producer Support Estimate (PSE) is the annual monetary value of gross transfers from consumers and taxpayers to agricultural producers, measured at the farm-gate level, arising from policy measures that support agriculture, regardless of their nature, objectives or impacts on farm production or income.

Table A.3. Results by commodity

			1986	1990	1995	2000	2005	2010	2015
CC	Cabbage	Original	0.048	0.048	0.575	0.658	0.686	0.758	0.705
		Revised	0.048	0.048	0.355	0.517	0.479	0.584	0.574
CU	Cucumbers	Original	0.193	0.050	0.195	0.307	0.257	0.345	0.029
		Revised	0.087	0.048	0.045	0.208	0.191	0.252	0.029
SP	Spinach	Original	0.506	0.048	0.584	0.665	0.442	0.029	0.029
		Revised	0.494	0.048	0.553	0.773	0.263	0.029	0.029
WO	Welsh Onion	Original	0.453	0.225	0.482	0.689	0.756	0.774	0.694
		Revised	0.048	0.048	0.045	0.262	0.343	0.371	0.294
AP	Apples	Original	0.388	0.167	0.212	0.305	0.145	0.145	0.145
		Revised	0.457	0.192	0.315	0.312	0.145	0.145	0.156
GR	Grapes	Original	0.344	0.464	0.545	0.611	0.622	0.666	0.569
		Revised	0.441	0.548	0.596	0.644	0.631	0.675	0.580
MN	Mandarin	Original	0.167	0.167	0.373	0.296	0.145	0.541	0.295
		Revised	0.167	0.167	0.390	0.145	0.145	0.357	0.145
PR	Pears	Original	0.294	0.074	0.455	0.687	0.534	0.632	0.463
		Revised	0.180	0.074	0.283	0.671	0.570	0.664	0.446
SW	Strawberries	Original	0.091	0.091	0.315	0.254	0.097	0.167	0.075
		Revised	0.091	0.091	0.337	0.236	0.078	0.070	0.057

Note: The table shows the same data (*MPD/PP*) used for Figure A.2.

Figure A.3. Aggregated results

Note: On the left panel, the *y*-axis shows *MPD/PP*, or equivalently, *MPS/VP*. On the right panel, the *y*-axis shows %PSE.

Conclusion

The following two revisions have been made for fruits and vegetables in Japan:

1. The estimation of the marketing margin is adjusted using wholesale price, replacing incomplete margin data, in line with the PSE manual.
2. Quality differences for vegetables are properly accounted for using the price gap between domestic and imported products, measured at the same market level.

As a result, the estimated total MPS of fruits and vegetables and % PSE are reduced relative to previous estimates, by 8 and 1.4 percentage points on average respectively.

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