

Read-me-file: Extending the GTAP Database and Model to Cover Domestic Support Issues using the EU as example

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1. General remarks:

This approach consists of various steps to update domestic support in the GTAP database. We start the procedure with a *.tab-file to adjust the aggregation of PSE data (compare Section 2.). Figure 1 provides a first overview of the different steps, which are initiated thereafter. The allocation of PSE data is described in Section 3 and is followed by the calculation of shocks needed to update the allocation of domestic support in the GTAP database (compare Section 4.). Thereafter, we start an iterative procedure to implement the allocation of domestic support in the GTAP database using the `altertax` program (compare Section 5.). A GTAP view file is used to produce view files for tax rates and some coefficients (compare Section 6.). After obtaining the updated final database, you first run a numeraire shock scenario to implement a new closure (compare Section 7.). Then, calculate new shocks and run the policy simulations, which in this case correspond to a 100% removal of the other transfer payments (see Section 8.). In the following sections, we briefly describe the *.tab-files and identify all input, output and windows batch files, which are necessary to run the model.

2. ds_regmap.tab

This tab.file is used to adjust the PSE data at EU member state level to the aggregation chosen in GTAP.

Input:

- | | |
|------------------------------|--|
| – <code>pse_eu.har</code> | PSE data for 27 EU member states (DSDATA) |
| – <code>sets.har</code> | GTAP sets file (GTAPSETS) |
| – <code>ds_sets.har</code> | Additional sets for domestic support (DSSETS) |
| – <code>ds_regmap.tab</code> | Tablo input file to change the aggregation of PSE data |
| – <code>ds_regmap.cmf</code> | Gempack command file |

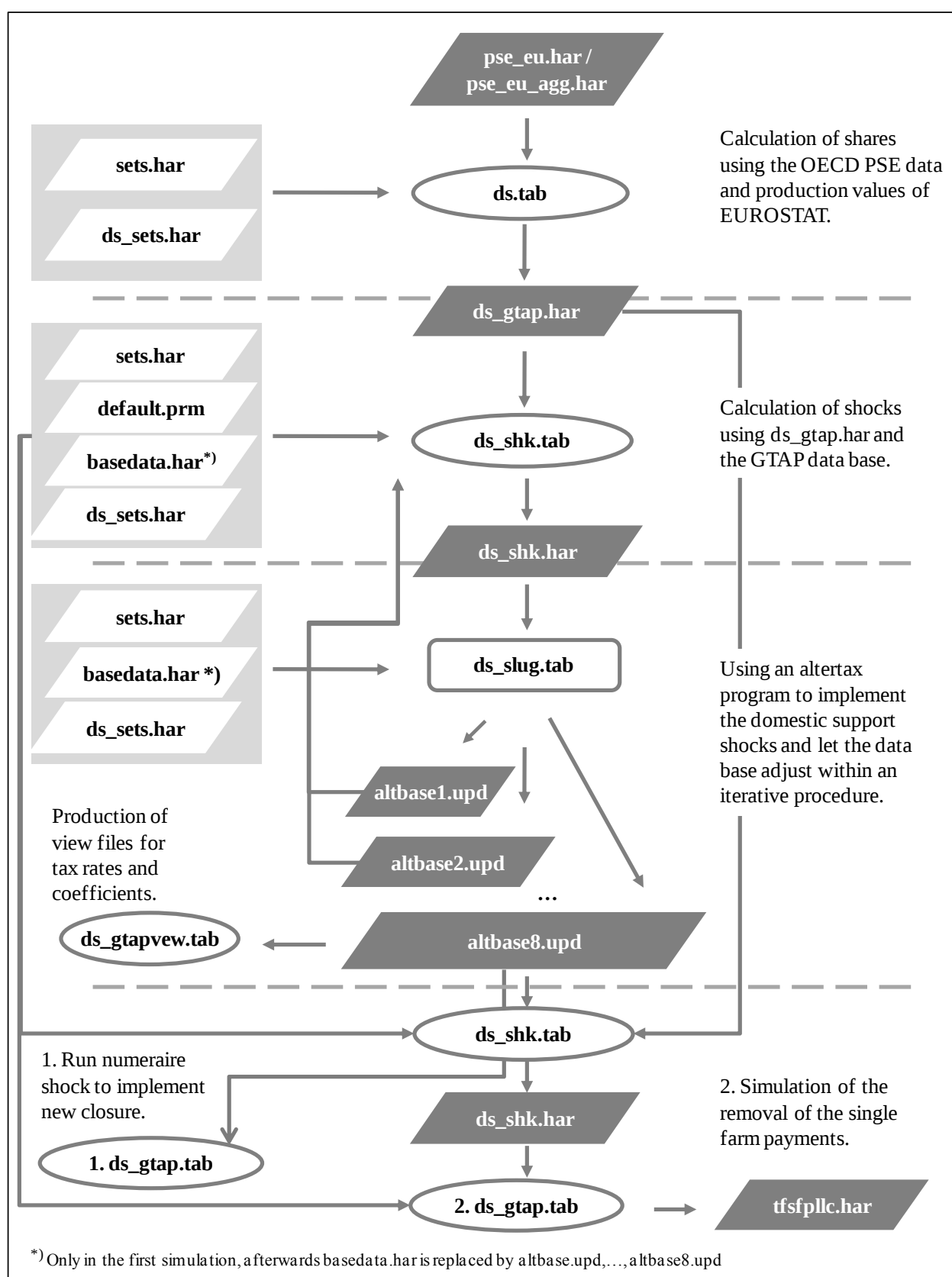
Output:

- | | |
|-------------------------------|---------------------|
| – <code>pse_eu_agg.har</code> | Aggregated PSE data |
|-------------------------------|---------------------|

Windows batch file:

- | |
|-----------------------------|
| – <code>dsregmap.bat</code> |
|-----------------------------|

Figure 1: Overview update domestic support procedure



Source: Authors' elaboration.

3. ds.tab

This ds.tab-file is used to calculate the shares of PSE data in relation to the EUROSTAT production values to allow for the scaling procedure within the GTAP database.

Input:

- pse_eu_agg.har	Aggregated PSE data (DSDATA)
- sets.har	GTAP sets (GTAPSETS)
- ds_sets.har	Additional sets for domestic support (DSSETS)
- ds.tab	Tab.file to calculate shares
- ds.cmf	Command.file

Output:

- ds_gtap.har	Allocation of PSE data
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Windows batch file:

- ds.bat

You can run the ds.tab file using the windows batch file "ds.bat" As result you will then obtain "ds_gtap.har".

In the file ds.tab you have to decide between option (a) and (b) to allocate the Single Farm Payment (SFP):

(a) Homogenous rate across factors and across sectors

```
!-----!  
! 1. option                                     !  
!-----!  
! Homogenous rate across factors and across sectors (default) !  
!-----!  
  
Coefficient (all,i,NNAT_COMM) (all,j,TRAD_COMM) (all,r,REG) TVFM(i,j,r)  
#Factor Usage #;  
  
Formula (all,i,NNAT_COMM) (all,j,TRAD_COMM) (all,r,REG)  
TVFM(i,j,r)=sum{k,NNATDIS_COMM:FACTMAP(k)=i,EVFA(k,j,r)};  
  
Coefficient (all,i,NNAT_COMM) (all,r,REG) TVFMshr(i,r)  
# Factor Usage Shares #;  
  
Formula (all,i,NNAT_COMM) (all,r,REG)  
TVFMshr(i,r) = sum{j,AGRI_COMM,TVFM(i,j,r)}/sum{k,NNAT_COMM,  
sum{j,AGRI_COMM,TVFM(k,j,r)});  
  
Coefficient (all,i,NNAT_COMM) (all,r,DS_REG) OTRAN(i,r)  
# Other Transfers in the form of Activity-generic Payments #;  
  
Formula (all,i,NNAT_COMM) (all,r,DS_REG)  
OTRAN(i,r) = 0;  
  
Formula (all,i,NNAT_COMM) (all,r,DS_REG)  
OTRAN(i,r) = TVFMshr(i,r)*sum{k,OTPM,OTPH(k,r)};
```

(b) OTP is allocated with homogenous rate across primary agricultural commodities to the factors land, labor and capital according to predetermined shares based on assumptions. The assumptions can be adjusted by diluting the share of the factors labor and capital in equal

proportions and loading this onto the factors land to increase the degree of decoupling. The percental reduction of the factors labor and capital can be modified using the coefficient SHIFTFCT in pse_eu.har.

```

!-----!
! 2a. option                                     !
!-----!
! Reducing the factor share of capital and labor, shift this to onto the factor!
! land                                           !
!-----!

Coefficient (all,i,NNAT_COMM) (all,j,TRAD_COMM) (all,r,REG) TVFM(i,j,r)
#Factor Usage #;

Formula (all,i,NNAT_COMM) (all,j,TRAD_COMM) (all,r,REG)
TVFM(i,j,r)=sum{k,NNATDIS_COMM:FACMAP(k)=i,EVFA(k,j,r)};

Coefficient (all,i,NNAT_COMM) (all,r,REG) TVFMSHR(i,r)
# Factor Usage Shares #;

Formula (all,i,NNAT_COMM) (all,r,REG)
TVFMSHR(i,r) = sum{j,AGRI_COMM,TVFM(i,j,r)}/sum{k,NNAT_COMM,
sum{j,AGRI_COMM,TVFM(k,j,r)};

Coefficient(all,i,NNAT_COMM) SHIFTFCT(i)
# predetermined reduction of the shares for capital and labor #;
Read (all,i,NNAT_COMM)SHIFTFCT(i) from file DOMSUP header "SFCT";

Coefficient (all,i,MFAC_COMM) (all,r,DS_REG) RFCTSHR(i,r)
# Reduced factor share #;
Formula (all,i,MFAC_COMM) (all,r,DS_REG)
RFCTSHR(i,r)=TVFMSHR(i,r)*SHIFTFCT(i);

Coefficient (all,i,NNAT_COMM) (all,r,DS_REG) DECOUPSHR(i,r)
# Degree of Decoupling #;
Formula (all,i,MFAC_COMM) (all,r,DS_REG)
DECOUPSHR(i,r)=RFCTSHR(i,r);
Formula (all,r,DS_REG)
DECOUPSHR("land",r)= 1-sum{k,MFAC_COMM,RFCTSHR(k,r)};

Coefficient (all,i,NNAT_COMM) (all,r,DS_REG) OTRAN(i,r)
# Other Transfers in the form of Activity-generic Payments #;

Formula (all,i,NNAT_COMM) (all,r,DS_REG)
OTRAN(i,r) = 0;

Formula (all,i,NNAT_COMM) (all,r,DS_REG)
OTRAN(i,r) = DECOUPSHR(i,r)*sum{k,OTPM,OTPH(k,r)};

```

(c) Adjust the factor usage share manually in the har-file according to your assumption of the allocation of SFP or create a header in the file pse_eu_agg.har to read in the factor usage share.

```

!-----!
! 2b. option                                     !
!-----!

coefficient (all,i,NNAT_COMM) (all,r,REG) TVFMSHR(i,r)
# Factor Usage Shares #;

Formula (all,i,NNAT_COMM) (all,r,REG)
TVFMSHR(i,r) = 0;

Formula (all,r,REG)
TVFMSHR("land",r) = 1;

```

```

COEFFICIENT (all,i,NNAT_COMM) (all,r,DS_REG) OTRAN(i,r)
# Other Transfers in the form of Activity-generic Payments #;

FORMULA (all,i,NNAT_COMM) (all,r,DS_REG)
OTRAN(i,r) = 0;

FORMULA (all,i,NNAT_COMM) (all,r,DS_REG)
OTRAN(i,r) = TVFMSHR(i,r)*sum{k,OTPM,OTPH(k,r)};

!-----!
! Calculation of the OTP /SFP share of production value !
!-----!

Zerodivide (zero_by_zero) default 0.0;
Zerodivide (nonzero_by_zero) default 0.0;

Coefficient (all,i,NNATDIS_COMM) (all,r,DS_REG) OTP_PVS(i,r)
# OTP production value share #;

Formula (all,r,DS_REG)
OTP_PVS("land",r) = OTRAN("land",r)/sum{k,AGRI_COMM,PRODN(k,r)};
Formula (all,r,DS_REG)
OTP_PVS("capital",r) = OTRAN("capital",r)/sum{k,AGRI_COMM,PRODN(k,r)};
Formula (all,r,DS_REG)
OTP_PVS("unsklab",r) = OTRAN("labor",r)*SHARELAB("unsklab",r)
/ sum{k,AGRI_COMM,PRODN(k,r)};
Formula (all,r,DS_REG)
OTP_PVS("sklab",r) = OTRAN("labor",r)*SHARELAB("sklab",r)
/ sum{k,AGRI_COMM,PRODN(k,r)};

```

4. ds_shk.tab

This tab.file is used to calculate the shocks to adjust the GTAP database.

Input:

– basedata.har	GTAP Version 8 base data (GTAPDATA)
– ds_gtap.har	Allocation of PSE data (DSDATA)
– sets.har	GTAP sets file (GTAPSETS)
– ds_sets.har	Additional sets for domestic support (DSSETS)
– ds_shk.tab	Tab file to calculate the shocks
– ds_shk.cmf	Command file

Output:

– ds_shk.har	Shock file
--------------	------------

Windows batch file:

– dsshk.bat

According to your chosen allocation of the SFP, you have to adjust the code in this tab.file:

(a) Homogenous rate (Standard GTAP database)

```
!-----!  
! 1. option: Homogenous rate (Standard GTAP database) !  
!-----!  
  
Coefficient (all,r,DS_REG) OTP_SHR(r)  
# Share of domestic support allocated to SFP subsidies #;  
Formula(initial) (all,r,DS_REG)  
    OTP_SHR(r) = sum{i,NNATDIS_COMM,sum{j,AGRI_COMM,VFMT(i,j,r)  
        - VFMT(i,j,r,"otp")}}  
        / sum{a,AGRI_COMM,VOM(a,r)};  
  
Coefficient (all,i,NNATDIS_COMM) (all,r,DS_REG) OTP_PVS(i,r)  
# OTP production value share #;  
Read OTP_PVS from file DSDATA header "OPVS";  
  
Coefficient (all,r,DS_REG) SHOTP(r)  
# Shock to OTP (SFP) #;  
Formula (all,r,DS_REG)  
    SHOTP(r) = 0;  
  
Formula (all,r,DS_REG)  
    SHOTP(r) = sum{i,NNATDIS_COMM,OTP_PVS(i,r)} - OTP_SHR(r);
```

(b) According to the assumed allocation across factors

```
!-----!  
! 2. option: According to assumed allocation across factors !  
!-----!  
  
COEFFICIENT (all,i,NNATDIS_COMM) (all,r,DS_REG) OTP_SHR(i,r)  
# Share of domestic support allocated to SFP subsidies #;  
FORMULA(INITIAL) (all,i,NNATDIS_COMM) (all,r,DS_REG)  
    OTP_SHR(i,r) = sum{j,AGRI_COMM,VFMT(i,j,r) - VFMS(i,j,r)}  
        / sum{a,AGRI_COMM,VOM(a,r)};  
  
COEFFICIENT (all,i,NNATDIS_COMM) (all,r,DS_REG) OTP_PVS(i,r)  
# OTP production value share #;  
read OTP_PVS from file DSDATA header "OPVS";
```

```

COEFFICIENT (all,i,NNATDIS_COMM) (all,r,DS_REG) SHOTP(i,r)
# Shock to OTP (SFP) #;
FORMULA (all,i,NNATDIS_COMM) (all,r,DS_REG)
    SHOTP(i,r) = 0;

FORMULA (all,i,NNATDIS_COMM) (all,r,DS_REG)
    SHOTP(i,r) = OTP_PVS(i,r) - OTP_SHR(i,r);

```

First, you need to run this file to calculate the new value flows VFMT, VFMTX, VDFMX and VIFMX. Second, import the new value flows into new header in basedata.har. Then re-activate the "read into" command in the tab-file and re-run ds_shk.tab.

e.g.:

```

Coefficient (all,i,ENDW_COMM) (all,j,PROD_COMM) (all,r,REG) (all,g,BASEGROUP)
    VFMTX(i,j,r,g)
# VFM + ACT and GCT #;
FORMULA(initial) (all,i,ENDW_COMM) (all,j,PROD_COMM) (all,r,REG) (all,g,BASEGROUP)
    VFMTX(i,j,r,g) = VFM(i,j,r) + FTRV(i,j,r); !
    Read VFMTX from file GTAPDATA header "VFMTX";
!

```

5. ds_slug.tab

Start the update procedure using a variant of the altermat program (Malcolm, 1998). In this model we use a variant of the altermat code where all endowments are sluggish (original tab-file is called slug.tab). Using ds_slug.tab the GTAP database is updated stepwise with a new allocation of domestic support.

Input:

– basedata.har	GTAP base data (GTAPDATA)
– sets.har	GTAP sets file (GTAPSETS)
– ds_sets.har	Additional sets for domestic support (DSSETS)
– ds_shk1.har	
– ds_shk8.har	Shock files
– ds_slug.tab	Altermat tab file
– ds_slug.sti	Stored Input file

Output:

– altbase.upd, altbase1.upd, ..., altbase8.upd	Updated GTAP database
--	-----------------------

Windows batch file:

- update_ds.bat (for the whole procedure up to now)

Again, you have to select one of the SFP allocation options:

Please select either tfsfp(r) or tfsfp(i,r) according to your allocation of SFP

Equation spfactprice3a

! This equation links domestic and firm demand prices. It holds for Sluggish endowment goods and captures the effect of taxation of firms' usage of primary factors. (HT#17)!

```
(all,i,ENDW_COMM) (all,j,AGRI_COMM) (all,r,REG)
pmesx(i,j,r,"otp") = tfsfp(r) + !tfsfp(i,r)+ !pmest(i,j,r);
```

(a) Homogenous rate:

```
!-----!
! Option 1: Homogenous rate                                     !
!-----!
```

Coefficient (all,r,DS_REG) SH_OTP(r)

Share of domestic support allocated to sfp subsidies #;

Formula(initial) (all,r,DS_REG)

```
SH_OTP(r) = sum{i,NNATDIS_COMM, sum{j,AGRI_COMM,
      VFMT(i,j,r)-VFMX(i,j,r,"otp") }}
      / sum{j, AGRI_COMM, VOM(j,r)};
```

Variable(change) (all,r,DS_REG) del_sh_otp(r)

Change in the share of OTP support #;

Update (change) (all,r,DS_REG)

```
SH_OTP(r) = del_sh_otp(r);
```

Equation o_powerotp (all,r,DS_REG)

!This equation links the changes in OTP with changes in the corresponding value flows!

```
100*(sum{a,AGRI_COMM,VOM(a,r)}*del_sh_otp(r)
+ SH_OTP(r)*sum{j,AGRI_COMM,VOM(j,r)*[pm(j,r) + qo(j,r)]})
= sum{i,NNATDIS_COMM,sum{j,AGRI_COMM,VFMT(i,j,r)*[pmest(i,j,r) + qfe(i,j,r)]
- VFMX(i,j,r,"otp")*[pmesx(i,j,r,"otp") + qfe(i,j,r)]});
```

(b) Other distribution options

```
!-----!
! Option 2: other distribution methods                         !
!-----!
```

COEFFICIENT (all,i,NNATDIS_COMM) (all,r,DS_REG) SH_OTP(i,r)

Share of domestic support allocated to sfp subsidies #;

FORMULA(initial) (all,i,NNATDIS_COMM) (all,r,DS_REG)

```
SH_OTP(i,r) = sum{j,AGRI_COMM, VFMT(i,j,r)-VFMX(i,j,r,"otp") }
      / sum{j,AGRI_COMM, VOM(j,r)};
```

VARIABLE(change) (all,i,NNATDIS_COMM) (all,r,DS_REG) del_sh_otp(i,r)

Percentage change in share of OTP support #;

UPDATE (change) (all,i,NNATDIS_COMM) (all,r,DS_REG)

```
SH_OTP(i,r) = del_sh_otp(i,r);
```

EQUATION o_powerotp (all,i,NNATDIS_COMM) (all,r,DS_REG)

```
100*(sum{j,AGRI_COMM,VOM(j,r)}*del_sh_otp(i,r)
+ SH_OTP(i,r)*sum{j,AGRI_COMM,VOM(j,r)*[pm(j,r) + qo(j,r)]})
= sum{j,AGRI_COMM, VFMT(i,j,r)*[pmest(i,j,r) + qfe(i,j,r)]
- VFMX(i,j,r,"otp")*[pmesx(i,j,r,"otp") + qfe(i,j,r)]};
```

This is an iterative procedure, where the shocks are implemented stepwise, therefore, various Gempack command files are used (alterdo.cmf, alterdo1.cmf, ..., alterdo8.cmf). Here, only an example is shown. Due to the stepwise implementation of shocks some shocks are commented out using "!" in the example below. For the SFP please select the options accordingly to the distribution method of these payments.

Example swaps and shocks (alterdo.cmf):

```

!-----!
!SFP allocation options:                                     !
!-----!
! 1 option: homogenous rate                                !
!-----!
!swap tfsfp(DS_REG)      = del_sh_OTP(DS_REG);
!shock del_sh_OTP(DS_REG) = select from file ds_shk.har header "sfp";
!-----!
! 2. option: other distribution methods                      !
!-----!
!swap tfsfp("land",DS_REG)      = del_sh_OTP("land",DS_REG);
!swap tfsfp("capital",DS_REG)    = del_sh_OTP("capital",DS_REG);
!swap tfsfp("unsklab",DS_REG)    = del_sh_OTP("unsklab",DS_REG);
!swap tfsfp("sklab",DS_REG)      = del_sh_OTP("sklab",DS_REG);

!shock del_sh_OTP("land",DS_REG)  = select from file ds_shk.har header "sfp";
!shock del_sh_OTP("capital",DS_REG) = select from file ds_shk.har header "sfp";
!shock del_sh_OTP("unsklab",DS_REG) = select from file ds_shk.har header "sfp";
!shock del_sh_OTP("sklab",DS_REG)  = select from file ds_shk.har header "sfp";
!-----!
! end option                                              !
!-----!
! SCT                                                    !
!-----!
shock potax_sct(P_AGR1_COMM,DS_REG) = select from file ds_shk.har header "psct";
shock potax_sct(PDR_COMM,DS_REG)    = select from file ds_shk.har header "psct";
shock potax_sct(PFB_COMM,DS_REG)    = select from file ds_shk.har header "psct";
!-----!
swap tfsct("land",P_AGR1_COMM,DS_REG) = del_shrland_SCT(P_AGR1_COMM,DS_REG);
swap tfsct("UnSkLab",P_AGR1_COMM,DS_REG) = del_shrunsk_SCT(P_AGR1_COMM,DS_REG);
swap tfsct("SkLab",P_AGR1_COMM,DS_REG) = del_shrskil_SCT(P_AGR1_COMM,DS_REG);
swap tfsct("capital",P_AGR1_COMM,DS_REG) = del_shrcap_SCT(P_AGR1_COMM,DS_REG);
swap to(P_AGR1_COMM,DS_REG)              = del_shrout_SCT(P_AGR1_COMM,DS_REG);
swap tfdmsct(P_AGR1_COMM,DS_REG)         = del_shrint_SCT(P_AGR1_COMM,DS_REG);
!
shock del_shrland_SCT(P_AGR1_COMM,DS_REG)
= select from file ds_shk.har header "shkl";
shock del_shrunsk_SCT(P_AGR1_COMM,DS_REG)
= select from file ds_shk.har header "shku";
shock del_shrskil_SCT(P_AGR1_COMM,DS_REG)
= select from file ds_shk.har header "shks";
shock del_shrcap_SCT(P_AGR1_COMM,DS_REG)
= select from file ds_shk.har header "shkc";
shock del_shrout_SCT(P_AGR1_COMM,DS_REG)
= select from file ds_shk.har header "shko";
shock del_shrint_SCT(P_AGR1_COMM,DS_REG)
= select from file ds_shk.har header "shki";

swap tfsct("land",PDR_COMM,DS_REG)      = del_shrland_SCT(PDR_COMM,DS_REG);
swap tfsct("UnSkLab",PDR_COMM,DS_REG)    = del_shrunsk_SCT(PDR_COMM,DS_REG);
swap tfsct("SkLab",PDR_COMM,DS_REG)      = del_shrskil_SCT(PDR_COMM,DS_REG);
swap tfsct("capital",PDR_COMM,DS_REG)    = del_shrcap_SCT(PDR_COMM,DS_REG);
swap to(PDR_COMM,DS_REG)                 = del_shrout_SCT(PDR_COMM,DS_REG);
swap tfdmsct(PDR_COMM,DS_REG)            = del_shrint_SCT(PDR_COMM,DS_REG);

shock del_shrland_SCT(PDR_COMM,DS_REG)
= select from file ds_shk.har header "shkl";
shock del_shrunsk_SCT(PDR_COMM,DS_REG)
= select from file ds_shk.har header "shku";
shock del_shrskil_SCT(PDR_COMM,DS_REG)
= select from file ds_shk.har header "shks";
shock del_shrcap_SCT(PDR_COMM,DS_REG)
= select from file ds_shk.har header "shkc";
shock del_shrout_SCT(PDR_COMM,DS_REG)
= select from file ds_shk.har header "shko";

```

```

shock del_shrint_SCT(PFB_COMM,DS_REG)
= select from file ds_shk.har header "shki";

swap tfscct("land",PFB_COMM,DS_REG)      = del_shrland_SCT(PFB_COMM,DS_REG);
swap tfscct("UnSkLab",PFB_COMM,DS_REG)    = del_shrunsk_SCT(PFB_COMM,DS_REG);
swap tfscct("SkLab",PFB_COMM,DS_REG)      = del_shrskil_SCT(PFB_COMM,DS_REG);
swap tfscct("capital",PFB_COMM,DS_REG)    = del_shrcap_SCT(PFB_COMM,DS_REG);
swap to(PFB_COMM,DS_REG)                  = del_shrout_SCT(PFB_COMM,DS_REG);
swap tfdmsct(PFB_COMM,DS_REG)             = del_shrint_SCT(PFB_COMM,DS_REG);

shock del_shrland_SCT(PFB_COMM,DS_REG)
= select from file ds_shk.har header "shkl";
shock del_shrunsk_SCT(PFB_COMM,DS_REG)
= select from file ds_shk.har header "shku";
shock del_shrskil_SCT(PFB_COMM,DS_REG)
= select from file ds_shk.har header "shks";
shock del_shrcap_SCT(PFB_COMM,DS_REG)
= select from file ds_shk.har header "shkc";
shock del_shrout_SCT(PFB_COMM,DS_REG)
= select from file ds_shk.har header "shko";
shock del_shrint_SCT(PFB_COMM,DS_REG)
= select from file ds_shk.har header "shki";
!-----!
! ACT + all GCTs                                     !
!-----!
!swap tfsub("land",DS_REG,group)      = del_shrendw("land",DS_REG,group);
!swap tfsub("UnSkLab",DS_REG,group)    = del_shrendw("unsklab",DS_REG,group);
!swap tfsub("SkLab",DS_REG,group)      = del_shrendw("sklab",DS_REG,group);
!swap tfsub("capital",DS_REG,group)    = del_shrendw("capital",DS_REG,group);
swap tfdmsub(DS_REG,GROUP)            = del_shrint(DS_REG,GROUP);
!
!shock del_shrendw("land",DS_REG,group)
!=select from file ds_shk.har header "sken";
!shock del_shrendw("unsklab",DS_REG,group)
!=select from file ds_shk.har header "sken";
!shock del_shrendw("sklab",DS_REG,group)
!=select from file ds_shk.har header "sken";
!shock del_shrendw("capital",DS_REG,group)
!=select from file ds_shk.har header "sken";
shock del_shrint(DS_REG,GROUP)
=select from file ds_shk.har header "skin";
!-----!

```

After each step of the altermat simulation the shocks have to be re-calculated using ds_shk.tab to produce a new shock file.

6. ds_gtpview.tab

This tab-file is used to produce view files of coefficients and tax rates.

Input:

- | | |
|------------------|---|
| – altbase8.upd | Updated GTAP database (GTAPDATA) |
| – sets.har | GTAP sets file (GTAPSETS) |
| – ds_sets.har | Additional sets for domestic support (DSSETS) |
| – default.prm | GTAP parameter file (GTAPPARM) |
| – ds_gtpview.tab | Tab file |
| – ds_gtpview.cmf | Command file |

Output:

- | | |
|-----------------|-------------------|
| – altbase8T.har | Updated tax rates |
| – altbase8V.har | Updated view file |

7. ds_gtap.tab

This tab-file is used to run the numeraire shock, as a test simulation and implement the new closure.

Input:

– altbase8.upd	Updated GTAP database (GTAPDATA)
– sets.har	GTAP sets file (GTAPSETS)
– ds_sets.har	Additional sets for domestic support (DSSETS)
– default.prm	GTAP parameter file (GTAPPARM)
– ds_gtap.tab	Tab file
– ds_gtap.sti	Stored input file

Output

– init.har	Update database
– init.slc	Header array coefficient file
– init.sl4	Solution file

Windows batch file:

– init.bat

8. Sensitivity Analysis

For the sensitivity analysis run ds_shk.tab again to calculate the shock for the removal of the single farm payments.

Input:

– altbase8.upd	Updated GTAP database (GTAPDATA)
– ds_gtap.har	Allocation of PSE data (DSDATA)
– sets.har	GTAP sets file (GTAPSETS)
– ds_sets.har	Additional sets for domestic support (DSSETS)
– ds_shk.tab	Tab file
– ds_shk.cmf	Command file

Output:

– ds_shk9.har	Shock file
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Then run ds_gtap.tab to shock the single farm payment to zero.

Input:

– altbase8.upd	Updated GTAP database (GTAPDATA)
– sets.har	GTAP sets file (GTAPSETS)
– ds_sets.har	Additional sets for domestic support (DSSETS)
– default.prm	GTAP parameter file (GTAPPARM)
– ds_shk9.har	Shock file
– ds_gtap.tab	Tab file

- ds_gtap.sti Stored input file

Output:

- tfsfp1lc.sl4 Solution file
- tfsfp1lc.slc Header array coefficient file
- tfsfp1lc.har GTAP updated database

Windows batch file:

- p_sfp_0.bat

You can start the update procedure including the SFP removal using the windows batch file p_sfp_0.bat. The results will be written to the "tfsfp1lc.har" tfsfp1lc.slc and "tfsfp1lc.sl4".