

X-12-ARIMA Quick Reference for DOS
Final Version 0.2.7
May 16, 2000

Running X-12-ARIMA on a single series:

`{path1\}x12a {-i} {path2\}filename`

where:

`{-i}` : optional flag that informs X-12-ARIMA that the named file is an input specification file.
`{path2\} filename.spc` : input specification file
`{path2\} filename.out` : main output file
`{path2\} filename.err` : error file
 `{path1\}` : path information for the X-12-ARIMA program (optional)
 `{path2\}` : path information for the X-12-ARIMA input file (optional)

Example:

`c : \x12arima\x12a b : \sales\retail`

Notes:

- (a) Only the filename is specified, not the extension.
- (b) The program uses this filename to form the filenames of other files generated by the program.

Running X-12-ARIMA on more than one series (a spec file for every series):

`{path1\} x12a -m {path2\} metafile`

where

-m : the flag that informs X-12-ARIMA that the named file is a metafile.
`{path2\} metafile.mta` : input metafile.
`{path2\} metafile.log` : logfile, which gives a summary of all the runs for a given metafile.
 `{path1\}` : path information for the X-12-ARIMA program (optional)
 `{path2\}` : path information for the X-12-ARIMA metafile (optional)

Example:

`c : \x12arima\x12a - m b : \sales\allsales`

Notes:

- (a) Only the filename (and path, if necessary) for the metafile is specified, not the extension.
- (b) The metafile must have one or two filenames (without extension) per line, separated by a tab or blank spaces. The first filename is the filename of an input specification file. The second (if specified) is the filename used to form the filenames of the output files for the run specified by the corresponding input specification file.
- (c) If only one filename is given on a particular line, the filename of the input specification file is used to generate the names of the output files.
- (d) Up to 500 input files can be specified in a single metafile.

Running X-12-ARIMA on more than one series (one spec file run on many series):

`{path1\} x12a {-i} {path2\}filename -d {path3\} metafile`

where

- `{-i}` : optional flag that informs X-12-ARIMA that the named file is an input specification file.
- `{path2\} filename.spc` : input specification file
- `-d` : the flag that informs X-12-ARIMA that the named file is a data metafile.
- `{path3\} metafile.dta` : data metafile.
- `{path3\} metafile.log` : logfile, which gives a summary of all the runs for a given metafile.
- `{path1\}` : path information for the X-12-ARIMA program (optional)
- `{path2\}` : path information for the X-12-ARIMA input file (optional)
- `{path3\}` : path information for the X-12-ARIMA data metafile (optional)

Example:

`c:\x12arima\x12a sales -d b:\sales\allsales`

Notes:

- (a) Only the filename (and path, if necessary) for the data metafile is specified, not the extension.
- (b) The metafile must have one or two filenames per line, separated by a tab or blank spaces. The first filename is the filename of a data file (including the file extension). The second (if specified) is the filename (without extension) used to form the filenames of the output files for the run specified by the corresponding input specification file.
- (c) If only one filename is given on a particular line, the filename of the data file is used to generate the names of the output files.
- (d) The X-12-ARIMA options given in the input specification file are applied to the data read in from each of the files given in the data metafile.
- (e) Up to 500 data files can be specified in a single data metafile.

Other options declared at time of execution:

- o filename : Filename (without extension) used for all output files generated during this run of the program.
- g dirname : Directory where graphics metafile and related files for external graphics are stored
 - n : (No tables) Only tables specifically requested in the input specification file will be printed out
 - w : Wide (132 character) format is used in main output file.
 - p : No pagination is used in main output file.
 - s : Store seasonal adjustment diagnostics in a file.
 - c : Sum each of the components of a composite adjustment, but only perform modelling or seasonal adjustment on the total.
 - v : Only check input specification file(s) for errors; no other processing.

Example:

`c:\x12arima\x12a -s -i b:\sales\retail -n`

Notes:

- (a) Options can entered in any order (ie, -n -s is treated the same as -s -n).
- (b) The -v flag should not be used with the -s, -c, -n, -w or -p flags. A warning message will be generated.
- (c) The -c flag can only be used with the -m flag.
- (d) The -m flag cannot be used with the -d flag.
- (e) The -i flag cannot be used with the -m flag.
- (f) The -o flag cannot be used with the -m and -d flags.

Specs and arguments for the input specification file

Notes:

- (a) For the arguments given below, when two or more values are connected by the symbol |, only one of the values can be assigned to the argument in a given run.
- (b) Dates are specified as either *year.month* for monthly data or *year.quarter* for quarterly data. For monthly series, the months can be denoted either by integers (1 to 12) or by month abbreviations (**jan**, **feb**, **mar**, **apr**, **may**, **jun**, **jul**, **aug**, **sep**, **oct**, **nov**, **dec**). For quarterly series, only integers (1 to 4) are allowed.
- (c) Anything on a line after a number sign (**#**) is considered a comment and is ignored by the program.
- (d) Every input specification file must have either a **series** spec or a **composite** (for runs where a composite seasonal adjustment is performed) spec, and this spec must be the first spec in the input file.
- (e) Spec names, arguments, key-words, and dates are not case sensitive. For example, **SeasonalMA** and **seasonalma** are treated the same by **X-12-ARIMA**.
- (f) Multiple arguments must be enclosed in parentheses. If an argument accepts multiple values but only one is given, then the parentheses are optional. If an argument accepts only a single value, the value must not be enclosed in parentheses.
- (g) Change of regime regression variables can be specified for seasonal (**seasonal**), trigonometric seasonal (**sincos**), trading day (**td**, **tdnolpyear**, **tdlcoef**, **tdlnolpyear**, or **tdstock**), length-of-month (**lom**), length-of-quarter (**loq**), or leap year (**lpyear**) regression variables. When a change of regime is specified for one of these regression variables, the program will add an additional set of regression variables that is defined as usual before the date of the change of regime, and set to zero for those observations on or after the change of regime date. A change of regime regression variable is specified by appending a valid date surrounded by slashes to the name of a regression variable in the **variables** argument of the **regression** spec. For example, to specify a change of regime in trading day after June of 1985, put **td/1985.jun/** in the **variables** argument of the **regression** spec.
- (h) **X-12-ARIMA** will extend the series with one year of forecasts prior to seasonal adjustment whenever a **REGARIMA** model is specified with no **forecast** spec. The only way to specify a seasonal adjustment without forecast extension when a **REGARIMA** model is specified is to set **maxlead** = 0 in the **forecast** spec.
- (i) The **data** and **file** arguments cannot be used in the same spec.
- (j) The **data** and **format** arguments cannot be used in the same spec.
- (k) The **function** and **power** arguments cannot be used together in the **transform** spec.
- (l) The **series** and **composite** specs cannot be used in the same input file.
- (m) The **automdl** and **arima** specs cannot be used in the same input file.
- (n) When **0.per** is entered for the ending date of the **modelspan** argument of the **series** or **composite** specs, the ending date of the model span will be set to be the final occurrence of the period **per** in the span of data analyzed (ie, **modelspan**=(1980.**jan**,0.**dec**) will set the ending date of the model span to the last December of the data).
- (o) Arguments which have been designated **Rarely Used Options** in the main documentation are given at the end of each spec, with a **"#"** as the first character of the line.

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```

series{
  data = ( )
  start = date
  span = ( startdate, enddate )
  period = 12 | 4 { default: 12 }
  title = ''
  file = ''
  format = '( valid FORTRAN format )' | '1r' | '2r' | '1l' | '2l' | 'cs' | 'datevalue' | 'x12save' | 'tramo'
  name = ''
  decimals = 0 { number of output decimals, must be an integer from 0 to 5, inclusive }
  precision = 0 { number of input decimals, must be an integer from 0 to 5, inclusive }
  comptype = add | sub | mult | div
  compwt = any number > 0 { default: 1 }
  modelspan = ( startdate, enddate ) { default: starting, ending date of span }
  spectrumstart = date
    { default: eight years before end of span for monthly series, start of span for quarterly series }
  print = See Table 1 for list of table names
  save = See Table 1 for list of table names
  savelog = See Table 2 for list of diagnostics
#  spectrumtype = arspec | periodogram { default: arspec }
#  diffspectrum = yes | no { default: yes }
#  missingcode = any number default: -99999.
#  missingval = any number default: 1000000000.
#  saveprecision = 10 { number of decimals in save tables, must be integer from 1 to 15 }
#  trimzero = yes | no { default: yes }
#  yr2000 = yes | no { default: yes }
}

```

```

composite{
  title = ' '
  name = ' '
  decimals = 0 { number of output decimals, must be an integer from 0 to 5, inclusive }
  modelspan = ( startdate, enddate ) { default: starting, ending date of the aggregated series }
  spectrumstart = date
    { default: eight years before end of span for monthly series, start of span for quarterly series }
  print = See Table 1 for list of table names
  save = See Table 1 for list of table names
  savelog = See Table 2 for list of diagnostics
#   spectrumtype = arspec | periodogram { default: arspec }
#   diffspectrum = yes | no { default: yes }
#   saveprecision = 10 { number of decimals in save tables, must be integer from 1 to 15 }
#   yr2000 = yes | no { default: yes }
}

transform{
  function = none | log | sqrt | inverse | logistic | auto { default: none }
  power = power for Box-Cox power transformation { default: no transformation }
  adjust = lom | loq | lpyear
  type = temporary | permanent
  data = ( )
  start = date { default: beginning of the series }
  title = 'of the adjustments'
  file = ' '
  format = '( valid FORTRAN format )' | '1r' | '2r' | '1l' | '2l' | 'cs' | 'datevalue' | 'x12save' | 'tramo'
  name = ' '
  precision = 0 { number of input decimals, must be an integer from 0 to 5, inclusive }
  mode = percent | ratio | diff
  print = See Table 1 for list of table names
  save = See Table 1 for list of table names
  savelog = See Table 2 for list of diagnostics
#   aicdiff = AICC difference needed to accept no transformation { default: 2.0 }
#   trimzero = yes | no { default: yes }
}

```

```

x11 {
  mode = mult | add | logadd | pseudoadd { default: mult }
  sigmalim = (1.5 2.5) | (lower and upper sigma limits, both > 0)
  seasonalma = x11default | s3x1 | s3x3 | s3x5 | s3x9 | s3x15 | stable | msr { default: msr }
  trendma = any odd number less than 101 { default: automatic trend selection }
  title = 'of seasonal adjustment'
  appendfcst = yes | no { default: no }
  x11easter = yes | no { default: no }
  force = totals | round | both { default: seasonally adjusted series unchanged }
  type = sa | summary | trend { default: sa }
  final = ao | ls | tc | user { default: all listed effects kept in final seasonally adjusted series }
  print = See Table 1 for list of table names
  save = See Table 1 for list of table names
  savelog = See Table 2 for list of diagnostics
#   forcaststart = month or quarter when forcing starts { default: 1st month or quarter of year }
#   keepholiday = yes | no { default: no }
#   calendarsigma = all | signif | select | none { default: none }
#   sigmavec = list of months to be grouped together
#   itrendma = centered1yr | cholette2yr { default: centered1yr }
#   trendic = any number > 0 { default : depends on what is entered for trendma }
#   true7term = yes | no { default: no }
#   sfshort = yes | no { default: no }
#   spectrumaxis = same | diff { default: diff }
#   print1stpass = yes | no { default: no }
}

```

```

x11regression {
  variables = (td | td1coef | tdstock[n]  aodate easter[1 to 25] | sceaster[1 to 25]  labor[1 to 25]
    thank[-8 to 17] )
  user = (names of user-defined regression variable(s))
  data = ( )
  start = date { default: the begining of the series }
  file = ' '
  format = '( valid FORTRAN format )' | 'datevalue' | 'x12save'
  aictest = (td | td1coef | tdstock  easter  user)
  tdprior = (td weight for each day of week) { default: no prior trading day }
  sigma = any number > 0 { default: 2.5 }
  outliermethod = addone | addall { default: addone }
  outlierspan = (startdate, enddate )
  critical = critical value for AO outlier testing
    { default: depends on length of span, see Table 3 }
  span = ( startdate, enddate ) { default: starting, ending date of span }
  usertype = ( td tdstock ao holiday easter labor thanks user )
  print = See Table 1 for list of table names
  save = See Table 1 for list of table names
  savelog = See Table 2 for list of diagnostics
#  aicdiff = difference needed for AIC-based test to accept regressor { default: 0.0 }
#  b = (initial coefficients for regressors, or fixed values with suffix f, e.g. -.6f)
#  centeruser = mean | seasonal { default: user-defined regressors are not centered }
#  eastermeans = yes | no { default: yes }
#  forcecal = yes | no { default: yes }
#  noapply = (td holiday)
#  umdata = ( ) { user-defined mean to be removed from irregular }
#  umfile = ' ' { file containing user-defined mean to be removed from irregular }
#  umstart = date { default: the begining of the series }
#  umformat = '( valid FORTRAN format )' | 'datevalue' | 'x12save'
#  umname = ' ' { name of the user-defined mean }
#  umtrimzero = yes | no { default: yes }
#  umprecision = 0 { number of input decimals, must be an integer from 0 to 5, inclusive }
}

identify{
  diff = ( orders of nonseasonal differencing )
  sdifff = ( orders of seasonal differencing )
  maxlag = number of acf's and pacf's to print { default: 36 for monthly series, 12 for quarterly series }
  print = See Table 1 for list of table names
  save = See Table 1 for list of table names
}

```

```

regression{
  variables = (const seasonal | sincos[1 to period/2] td | tdnolpyear | td1coef | td1nolpyear | tdstock[n]
    lpyear | loq | lom easter[1 to 25] | sceaster[1 to 25] labor[1 to 25] thank[-8 to 17]
    aodate lsdate tcdate rpddate-date)
  user = (names of user-defined regression variable(s))
  data = ( )
  start = date { default: the beginning of the series }
  file = ' '
  format = '( valid FORTRAN format )' | 'datevalue' | 'x12save'
  aictest = ( td | tdnolpyear | td1coef | td1nolpyear | tdstock easter user )
  usertype = ( constant seasonal td lpyear lom loq tdstock
    easter sceaster thanks labor holiday ao ls rp tc user )
  print = See Table 1 for list of table names
  save = See Table 1 for list of table names
  savelog = See Table 2 for list of diagnostics
# aicdiff = difference needed for AIC-based test to accept regressor { default: 0.0 }
# b = (initial coefficients for regressors, or fixed values with suffix f, e.g. -.6f)
# centeruser = mean | seasonal { default: user-defined regressors are not centered }
# eastermeans = yes | no { default: yes }
# noapply = (td ao ls tc holiday userseasonal user)
# tcrate = number between 0 and 1 { default: 0.70 * (12 / period) }
}

arima{
  model = (p d q)(P D Q)
  ar = (initial coefficients for AR, or fixed values with suffix f, e.g. -.6f)
  ma = (initial coefficients for MA, or fixed values with suffix f, e.g. -.6f)
  title = ' '
}

automdl{
  mode = both | fcst { default: fcst }
  method = first | best { default: first }
  file = ' ' { default: 'x12a.mdl' }
  qlim = limit for probability of Ljung-Box Q { default: 5.0 }
  fcstlim = limit for average forecast error { default: 15.0 }
  bcstlim = limit for average backcast error { default: 18.0 }
  overdiff = limit for overdifferencing { default: 0.9 }
  identify = all | first { default: first }
  outofsample = yes | no { default: no }
  print = See Table 1 for list of table names
  savelog = See Table 2 for list of diagnostics
}

estimate{
  maxiter = maximum number of iterations { default: 200 }
  tol = convergence tolerance { default: 10e-5 }
  exact = ma | arma | none { default: exact m.l.e for all coefficients }
  outofsample = yes | no { default: no }
  print = See Table 1 for list of table names
  save = See Table 1 for list of table names
  savelog = See Table 2 for list of diagnostics
# file = ' '
# fix = nochange | all | arima | reg | none { default: nochange }
}

```



```

outlier{
  types = none | ao | ls | tc | all { default: (ao ls) }
  method = addone | addall { default: addone }
  critical = critical value for outlier testing |(criticalAO,criticalLS,criticalTC)
    { default: depends on length of span, see Table 3 }
  span = (startdate, enddate )
  lsrn = number of successive level shifts to test { default: 0 }
  print = See Table 1 for list of table names
  save = See Table 1 for list of table names
#   tcrate = number between 0 and 1 { default: 0.70 * (12 / period) }
}

check{
  maxlag = number of acf's to print { default: 36 for monthly series, 12 for quarterly series }
  print = See Table 1 for list of table names
  save = See Table 1 for list of table names
  savelog = See Table 2 for list of diagnostics
}

forecast{
  maxlead = how many forecasts { default: one year }
  maxback = how many backcasts { default: 0 }
  probability = coverage probability of prediction intervals, assuming normality { default: 0.95 }
  exclude = number of observations to drop before starting forecasts { default: 0 }
  print = See Table 1 for list of table names
  save = See Table 1 for list of table names
}

slidingspans{
  start = starting date of ss comparisons { default: selected by program }
  length = length of sliding span { default: selected by program }
  numspans = number of sliding spans { default: selected by program }
  cutseas = any number > 0 { default: 3.0 }
  cutchns = any number > 0 { default: 3.0 }
  cuttd = any number > 0 { default: 2.0 }
  outlier = yes | keep
  fixmdl = yes | no | clear { default: model is fixed every span }
  fixreg = ( td holiday user outlier )
  print = See Table 1 for list of table names
  save = See Table 1 for list of table names
  savelog = See Table 2 for list of diagnostics
#   additivesa = percent | difference { default: difference }
}

```

```

history{
  estimates = ( sadj  sadjchng  trend  trendchng  seasonal  aic  fcst)
  sadjlags = vector of target lags for revisions history of the seasonally adjusted series
  trendlags = vector of target lags for revisions history of the trend component
  target = concurrent | final { default: final }
  start = starting date of revision history
  endtable = ending date of tables for seasonal adjustment revisions histories
  fstep = vector of forecast leads for the out-of-sample forecasts and MSE's { default: (1,period) }
  fixmdl = yes | no | clear { default: model is reestimated every time }
  fixreg = ( td  holiday  user  outlier )
  print = See Table 1 for list of table names
  save = See Table 1 for list of table names
  savelog = See Table 2 for list of diagnostics
#  refresh = yes | no { default: no }
#  outlier = ( keep | remove  auto ) { default: keep }
#  outlierwin = number of observations to test for outliers { default: one year }
}

```

Table 1. Tables printed or saved by X-12-ARIMA

Name	Abbrev.	Save Table?	Brief	Default	Spec
header	hdr		+	+	series
span	a1	+	+	+	series
seriesplot	a1p				series
specfile	spc	+	+	+	series
specorig	sp0			+	series
savefile	sav		+	+	series
seriesmvadj	mv	+	+	+	series
outlieradjorig	a19	+	+	+	series
compositesrs	cms	+	+	+	composite
compositeplot	cmp				composite
outlieradjcomposite	oac	+			composite
header	hdr		+	+	composite
indtest	itt		+	+	composite
indunmodsi	id8	+		+	composite
indftstd8	idf			+	composite
indreplacsi	id9			+	composite
indmovseasrat	ims			+	composite
indseasonal	isf	+	+	+	composite
indseasonaldiff	isd	+	+	+	composite
indseasonalplot	isp				composite
indseasadj	isa	+	+	+	composite
indadjstot	iaa	+	+	+	composite
indsadjround	irn	+	+	+	composite
indresidualseasf	irf			+	composite
indseasadjplot	iap				composite
indtrend	itn	+		+	composite
indtrendplot	itp				composite
indirregular	iir	+		+	composite
indirregularplot	iip				composite
origwindsaplot	ie0				composite
indmodoriginal	ie1	+			composite
indmodsadj	ie2	+			composite
indmodirr	ie3	+			composite
indyrtotals	ie4				composite
origchanges	ie5	+		+	composite
indsachanges	ie6	+		+	composite
indrevsachanges	i6a	+		+	composite
indrndsachanges	i6r	+		+	composite
indtrendchanges	ie7	+		+	composite
indrobustsa	iee	+			composite
indmcdmovavg	if1	+			composite
indx11diag	if2		+	+	composite
indqstat	if3		+	+	composite
ratioplotorig	ir1				composite
ratioplotindsa	ir2				composite
speccomposite	is0			+	composite
specindsa	is1		+	+	composite
specindirr	is2		+	+	composite
prior	a2	+	+	+	transform
permprior	a2p	+			transform
temprior	a2t	+			transform

Table 1. Tables printed or saved by X-12-ARIMA (continued)

Name	Abbrev.	Save Table?	Brief	Default	Spec
prioradjusted	a3	+		+	transform
transformed	trn	+			transform
aictransform	tac		+	+	transform
x11easter	h1	+	+	+	x11
combholiday	chl	+	+	+	x11
adjoriginal	b1	+	+	+	x11
ftestb1	b1f				x11
adjorigplot	b1p				x11
trendb2	b2	+			x11
sib3	b3	+			x11
replacsib4	b4				x11
seasonalb5	b5	+			x11
seasadjb6	b6	+			x11
trendb7	b7	+			x11
sib8	b8	+			x11
replacsib9	b9				x11
seasonalb10	b10	+			x11
seasadjb11	b11	+			x11
irregularb	b13	+			x11
irrwtb	b17	+			x11
tdadjorigb	b19	+			x11
extreme	b20	+			x11
adjoriginalc	c1	+			x11
trendc2	c2	+			x11
modsic4	c4	+			x11
seasonalc5	c5	+			x11
seasadjc6	c6	+			x11
trendc7	c7	+			x11
replacsic9	c9	+			x11
seasonalc10	c10	+			x11
seasadjc11	c11	+			x11
irregularc	c13	+			x11
irrwt	c17	+		+	x11
tdadjorig	c19	+			x11
extreme	c20	+			x11
adjoriginald	d1	+			x11
trendd2	d2	+			x11
modsid4	d4	+			x11
seasonald5	d5	+			x11
seasadjd6	d6	+			x11
trendd7	d7	+			x11
unmodsi	d8	+		+	x11
ftestd8	d8f		+	+	x11
unmodsiox	d8b	+			x11
autosf	asf				x11
replacsi	d9	+		+	x11
movseasrat	d9a			+	x11
seasonal	d10	+	+	+	x11
seasonaldiff	fsd	+	+	+	x11
seasonaladjregsea	ars	+	+	+	x11
seasonalplot	sfp				x11

Table 1. Tables printed or saved by X-12-ARIMA (continued)

Name	Abbrev.	Save Table?	Brief	Default	Spec
seasadj	d11	+	+	+	x11
seasadjtot	saa	+	+	+	x11
saround	rnd	+	+	+	x11
residualseasf	rsf			+	x11
seasadjplot	sap				x11
trend	d12	+		+	x11
trendadjls	tal	+			x11
biasfactor	bcf	+			x11
trendplot	trp				x11
irregular	d13	+		+	x11
irregularadjao	iao	+			x11
irregularplot	irp				x11
adjustfac	d16	+	+	+	x11
adjustdiff	fad	+	+	+	x11
calendar	d18	+	+	+	x11
origwsaplot	e0				x11
modoriginal	e1	+			x11
modseasadj	e2	+			x11
modirregular	e3	+			x11
yrtotals	e4			+	x11
origchanges	e5	+		+	x11
sachanges	e6	+		+	x11
revsachanges	e6a	+		+	x11
rndsachanges	e6r	+		+	x11
trendchanges	e7	+		+	x11
robustsa	e11	+			x11
mcdmovavg	f1	+			x11
x11diag	f2		+	+	x11
qstat	f3		+	+	x11
tdaytype	tdy		+	+	x11
specsa	sp1		+	+	x11
specirr	sp2		+	+	x11
ratioplotorig	ra1				x11
ratioplotsa	ra2				x11
priortd	a4	+	+	+	x11regression
extremevalb	b14				x11regression
x11regb	b15				x11regression
tradingdayb	b16	+			x11regression
combtradingdayb	b18	+			x11regression
holidayb	bxh	+			x11regression
calendarb	bxc	+			x11regression
combcalendarb	bcc	+			x11regression
extremeval	c14			+	x11regression
x11reg	c15			+	x11regression
tradingday	c16	+	+	+	x11regression
combtradingday	c18	+	+	+	x11regression
holiday	xhl	+	+	+	x11regression
calendar	xca	+	+	+	x11regression
combcalendar	xcc	+	+	+	x11regression
outlierhdr	xoh			+	x11regression
outlieriter	xoi	+			x11regression

Table 1. Tables printed or saved by X-12-ARIMA (continued)

Name	Abbrev.	Save Table?	Brief	Default	Spec
outliertests	xot				x11regression
xregressionmatrix	xrm	+			x11regression
xregressioncmatrix	xrc	+			x11regression
xaictest	xat		+	+	x11regression
acf	iac	+		+	identify
acfplot	acp			+	identify
pacf	ipc	+		+	identify
pacfplot	pcp			+	identify
regcoefficients	rgc				identify
regressionmatrix	rmx	+			regression
aictest	ats		+	+	regression
outlier	otl	+	+	+	regression
aoutlier	ao	+	+	+	regression
levelshift	ls	+	+	+	regression
temporarychange	tc	+	+	+	regression
tradingday	td	+	+	+	regression
holiday	hol	+	+	+	regression
userdef	usr	+	+	+	regression
regseasonal	a10	+	+	+	regression
header	hdr		+	+	automdl
automodels	amd		+	+	automdl
autochoice	ach		+	+	automdl
options	opt			+	estimate
iterations	itr	+			estimate
iterationerrors	ite				estimate
model	mdl	+	+	+	estimate
regcmatrix	rcm	+			estimate
estimates	est	+	+	+	estimate
armacmatrix	acm	+			estimate
lkstats	lks	+	+	+	estimate
lformulas	lkf				estimate
roots	rts	+			estimate
regressioneffects	ref	+			estimate
residuals	rsd	+			estimate
averagefcsterr	afc			+	estimate
header	hdr			+	outlier
iterations	oit	+			outlier
tests	ots				outlier
temporaryls	tls		+	+	outlier
finaltests	fts				outlier
acf	acf	+		+	check
acfplot	acp			+	check
pacf	pcf	+			check
pacfplot	pcp				check
acfsquared	ac2	+			check
acfsquaredplot	ap2				check
histogram	hst			+	check
normalitytest	nrm			+	check
specresidual	spr				check

Table 1. Tables printed or saved by X-12-ARIMA (continued)

Name	Abbrev.	Save Table?	Brief	Default	Spec
transformed	fttr	+		+	forecast
variances	fvr	+			forecast
forecasts	fct	+		+	forecast
header	hdr		+	+	slidingspans
ssftest	ssf			+	slidingspans
factormmeans	fmm			+	slidingspans
percent	pct		+	+	slidingspans
yypercent	ypc				slidingspans
summary	sum			+	slidingspans
yysummary	ysm			+	slidingspans
sfspans	sfs	+			slidingspans
chnbspans	chs	+			slidingspans
saspans	sas	+			slidingspans
ychngspans	ycs	+			slidingspans
tdspans	tds	+			slidingspans
indfactormmeans	fmi		+	+	slidingspans
indpercent	pci		+	+	slidingspans
indypercent	pci				slidingspans
indsummary	smi			+	slidingspans
indyysummary	piy				slidingspans
indsfspan	sis	+			slidingspans
indchnspan	cis	+			slidingspans
indsaspans	ais	+			slidingspans
indychngspan	yis	+			slidingspans
header	hdr		+	+	history
outlierhistory	rot	+	+	+	history
sfilterhistory	sflh	+			history
sarevisions	sar	+		+	history
sasummary	sas		+	+	history
saestimates	sae	+			history
indsarevisions	iar	+		+	history
indsasummary	ias		+	+	history
indsaestimates	iae	+			history
chngrevisions	chr	+		+	history
chnghsummary	chs		+	+	history
chnghestimates	che	+			history
trendrevisions	trr	+		+	history
trendsummary	trs		+	+	history
trendestimates	tre	+			history
trendchngrevisions	tcr	+		+	history
trendchnghsummary	tcs		+	+	history
trendchnghestimates	tce	+			history
sfrevisions	sfr	+		+	history
sfssummary	sfs		+	+	history
sfestimates	sfe	+			history
lkhdhistory	lkh	+	+	+	history
fcsterrors	fce	+	+	+	history
fcsthistory	fch	+			history

Table 2. Diagnostics saved to the log file by X-12-ARIMA

Name	Abbrev.	Spec	Name	Abbrev.	Spec
peaks	spk	series	m8	m8	x11
indm1	im1	composite	m9	m9	x11
indm2	im2	composite	m10	m10	x11
indm3	im3	composite	m11	m11	x11
indm4	im4	composite	q	q	x11
indm5	im5	composite	q2	q2	x11
indm6	im6	composite	movingseasratio	msr	x11
indm7	im7	composite	icratio	icr	x11
indm8	im8	composite	fstableb1	fb1	x11
indm9	im9	composite	fstabled8	fd8	x11
indm10	imt	composite	movingseasf	msf	x11
indm11	ime	composite	idseasonal	ids	x11
indq	iq	composite	aictest	ats	x11regression
indq2	iq2	composite	automodel	amd	automdl
indmovingseasratio	isr	composite	aic	aic	estimate
indicratio	iir	composite	aicc	acc	estimate
indfstabled8	id8	composite	bic	bic	estimate
indmovingseasf	isf	composite	averagefcsterr	afc	estimate
indidseasonal	iid	composite	aictest	ats	regression
peaks	spk	composite	normalitytest	nrm	check
indtest	itt	composite	ljungboxq	lbq	check
autotransform	atr	transform	percent	pct	slidingspans
m1	m1	x11	aveabsrevsa	asa	history
m2	m2	x11	aveabsrevchnng	ach	history
m3	m3	x11	aveabsrevindsa	iaa	history
m4	m4	x11	aveabsrevtrend	atr	history
m5	m5	x11	aveabsrevtrendchnng	atc	history
m6	m6	x11	aveabsrevsf	asf	history
m7	m7	x11	aveabsrevsfproj	asp	history

Table 3. Default Critical Values for Outlier Identification Generated by X-12-ARIMA

Number of Observations	Outlier Critical Value
48	3.6548
72	3.7375
96	3.7974
120	3.8444
144	3.8829
168	3.9156
192	3.9440
216	3.9690
240	3.9914
264	4.0116
288	4.0301
312	4.0471
336	4.0628
360	4.0774

Table 4. Graphics Metafile Codes

Code	Description	Code	Description
ori	Original Series	spcori	Spectrum of the Original Series
mvadj	Original Series with Missing Values Replaced	oadori	Outlier-Adjusted Original Series
prior	Prior Adjustment Factors	otl	Combined Outliers
ao	Additive Outliers	ls	Level Shift Outliers
tc	Temporary Change Outliers	rtd	Trading Day Factors from regARIMA model
rhol	Holiday Factors from regARIMA model	usrdef	User-Defined Regression Factors
rgseas	User-Defined Seasonal Regression Factors	idacf	ACFs Generated by Identify Spec
idpacf	PACFs Generated by Identify Spec	mdlest	regARIMA Model Estimates
fintst	Final Outlier t-test Statistics	acf	ACF
pacf	PACF	acf2	ACF of Squared Residuals
spcrsd	Spectrum of the regARIMA Model Residuals	fttr	Transformed Original Series and Forecasts
fct	Original Series and Forecasts	adjori	Prior-Adjusted Original Series
si	SI Ratios	siox	SI Ratios, with Labels for Outliers and Extreme Values
rsi	Replacement SI Ratios	sf	Seasonal Factors
sfr	Seasonal Factors with User-Defined Regression	sa	Seasonally Adjusted Series
trn	Final Trend-Cycle Component	irr	Final Irregular Component
irrwt	Irregular Weights	xtrm	Final Extreme Value Adjustment Factors
xeastr	Easter Factors	chol	Combined Holiday Factors
satot	Seasonally Adjusted Series with Forced Annual Totals	sarnd	Seasonally Adjusted Series with Rounding
caf	Combined Adjustment Factors	fincal	Combined Calendar Factors
spcsa	Spectrum of the Seasonally Adjusted Series	spcirr	Spectrum of the Modified Irregular
ptd	Prior Trading Day Factors	xtd	Trading Day Factors From Irregular Regression
ctd	Combined Trading Day Factors From Irregular Regression	xhol	Holiday Factors From Irregular Regression
cal	Calendar Factors From Irregular Regression	ccal	Combined Calendar Factors From Irregular Regression
sahst	History of the Seasonally Adjusted Series	csahst	History of the Percent Change in the Seasonally Adjusted Series
isahst	History of the Indirect Seasonal Adjustment Values	trnhst	History of the Trend Values
ctrhst	History of the Percent Change in the Trend Values	sfhst	History of the Seasonal Factor Values
aichst	History of the AICCs	fcthst	History of the Sum of Squared Forecast Errors
cfchst	History of Concurrent Forecasts and Forecast Errors	cmpori	Original Composite Series
odjcmp	Outlier Adjusted Composite Data	spccmp	Spectrum of the Composite Series
indsi	Indirect SI Ratios	indrsi	Indirect Replacement Values for the SI Ratios
indsf	Indirect Seasonal Factors	indsa	Indirect Seasonally Adjusted Series
indtrn	Indirect Trend	indirr	Indirect Irregular
indsat	Indirect Seasonally Adj with Forced Annual Totals	indsar	Indirect Seasonally Adjusted with Rounding
spcisa	Spectrum of the Indirect Seasonally Adjusted Series	spciir	Spectrum of the Indirect Modified Irregular