frbussupport.Rnw: Create Support Files

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0.1 stdver_varinfo

This code creates the varinfo.csv support file, parsing the data from the fixed format text file "frbus_package/mods/stdver_varinfo" into a data.frame.

```
raw = readLines("frbus_package/mods/stdver_varinfo")
```

Here we define the fixed length fields. The only reference to the original file seems to be in the stochsim program, to determine which are stochastic equations. There seems to be information in this file that is not used anywhere. I've made up names for some fields to use until I find better information.

```
flds = c("seq","vname","vdesc","vtype","vrule","sector",
         "var7","stoch","var8","var9","decomp")
start = c(1,5,16,111,115,117,130,132,135,137,139)
length = c(3,8,94,4,1,13,1,2,1,1,2)
parse = data.frame(flds,start,length)
rownames(parse) = parse$flds
(parse = subset(parse,select = -c(flds)))

##        start length
## seq        1      3
## vname      5      8
## vdesc     16     94
## vtype    111      4
## vrule    115      1
## sector   117     13
## var7     130      1
## stoch    132      2
## var8     135      1
## var9     137      1
## decomp   139      2
```

Using the field definitions that I created above, I transform the file's information into a data.frame.

```
varinfo = data.frame(lapply(flds,
            function(x) (trimws(substr(raw,parse[x,"start"],
                                sum(c(parse[x,"start"],parse[x,"length"],-1)))))),
            stringsAsFactors = FALSE)
colnames(varinfo) = flds
varinfo = varinfo[varinfo$vname!="ZZZBLANK",]
rownames(varinfo) = varinfo[,"vname"]
varinfo$seq = as.numeric(as.character(varinfo$seq))
varinfo$var7 = as.numeric(as.character(varinfo$var7))
varinfo$var8 = as.numeric(as.character(varinfo$var8))
```

```
varinfo$var9 = as.numeric(as.character(varinfo$var9))
varinfo$decomp = as.numeric(as.character(varinfo$decomp))
str(varinfo)
```

```
## 'data.frame': 508 obs. of  11 variables:
##  $ seq   : num  1 2 3 4 5 6 7 8 9 10 ...
##  $ vname : chr  "CENG" "D01Q4" "D2002" "D2003" ...
##  $ vdesc : chr  "Consumption of crude energy (oil, coal, natural gas),  2009 $" "Dummy, destru
##  $ vtype : chr  "B.4" "X.7" "X.7" "X.7" ...
##  $ vrule : chr  "A" "" "" "" ...
##  $ sector: chr  "sector_c.5" "" "" "" ...
##  $ var7  : num  4 1 1 1 1 1 1 1 1 1 ...
##  $ stoch : chr  "OT" "NO" "NO" "NO" ...
##  $ var8  : num  1 0 0 0 0 0 0 0 0 0 ...
##  $ var9  : num  0 0 0 0 0 0 0 0 0 0 ...
##  $ decomp: num  16 27 27 27 14 27 14 14 27 27 ...
```

I haven't figured out what most of the varinfo fields are used for but we can examine the values.

```
varinfo[c("CENG","PGDP"),]
```

```
##      seq vname
## CENG   1  CENG
## PGDP 216  PGDP
##                                                                  vdesc vtype
## CENG Consumption of crude energy (oil, coal, natural gas),  2009 $   B.4
## PGDP                                          Price index for GDP, cw     I
##      vrule      sector var7 stoch var8 var9 decomp
## CENG     A  sector_c.5    4    OT    1    0     16
## PGDP     A sector_g.44    4    NO    0    1     22
```

```
varinfo$vname
```

```
##   [1] "CENG"     "D01Q4"    "D2002"    "D2003"    "D69"      "D79A"
##   [7] "D8095"    "D81"      "D83"      "D86"      "D87"      "DCON"
##  [13] "DDOCKM"   "DDOCKX"   "DELRFF"   "DEUC"     "DFMPRR"   "DFPDBT"
##  [19] "DFPEX"    "DFPSRP"   "DGLPRD"   "DMPALT"   "DMPEX"    "DMPGEN"
##  [25] "DMPINTAY" "DMPRR"    "DMPSTB"   "DMPTAY"   "DMPTLR"   "DMPTLUR"
##  [31] "DMPTMAX"  "DMPTPI"   "DMPTR"    "DMPTRSH"  "DPADJ"    "DPGAP"
##  [37] "DRSTAR"   "EC"       "ECD"      "ECH"      "ECNIA"    "ECNIAN"
##  [43] "ECO"      "EGF"      "EGFI"     "EGFIN"    "EGFIT"    "EGFL"
##  [49] "EGFLN"    "EGFLT"    "EGFN"     "EGFO"     "EGFON"    "EGFOT"
##  [55] "EGPDIN"   "EGS"      "EGSI"     "EGSIN"    "EGSIT"    "EGSL"
##  [61] "EGSLN"    "EGSLT"    "EGSN"     "EGSO"     "EGSON"    "EGSOT"
##  [67] "EH"       "EHN"      "EI"       "EIN"      "EM"       "EMN"
```

```
##  [73] "EMO"      "EMON"     "EMP"      "EMPN"     "EMPT"     "EPD"
##  [79] "EPDN"     "EPI"      "EPIN"     "EPS"      "EPSN"     "EX"
##  [85] "EXN"      "FCBN"     "FCBRN"    "FGDP"     "FGDPT"    "FNICN"
##  [91] "FNILN"    "FNIN"     "FNIRN"    "FPC"      "FPCM"     "FPI10"
##  [97] "FPI10T"   "FPIC"     "FPITRG"   "FPX"      "FPXM"     "FPXR"
## [103] "FPXRR"    "FPXRRT"   "FRL10"    "FRS10"    "FRSTAR"   "FTCIN"
## [109] "FXGAP"    "FYNICN"   "FYNILN"   "FYNIN"    "GFDBTN"   "GFDRT"
## [115] "GFINTN"   "GFS"      "GFSN"     "GFSRPN"   "GFSRT"    "GFSUB"
## [121] "GFSUBN"   "GFT"      "GFTN"     "GFTRD"    "GFTRT"    "GSDBTN"
## [127] "GSDRT"    "GSINTN"   "GSSRPN"   "GSSRT"    "GSSUB"    "GSSUBN"
## [133] "GST"      "GSTN"     "GSTRD"    "GSTRT"    "HGEMP"    "HGGDP"
## [139] "HGGDPT"   "HGPCDR"   "HGPDR"    "HGPIR"    "HGPKIR"   "HGPPSR"
## [145] "HGVPD"    "HGVPI"    "HGVPS"    "HGX"      "HGYNID"   "HKS"
## [151] "HKSR"     "HLEPT"    "HLPRDT"   "HMFPT"    "HQLFPR"   "HQLWW"
## [157] "HUQPCT"   "HUXB"     "HXBT"     "JCCACN"   "JCCAN"    "JKCD"
## [163] "JRCD"     "JRH"      "JRPD"     "JRPI"     "JRPS"     "JYGFEN"
## [169] "JYGFGN"   "JYGSEN"   "JYGSGN"   "JYNCN"    "KCD"      "KH"
## [175] "KI"       "KPD"      "KPI"      "KPS"      "KS"       "LEF"
## [181] "LEFT"     "LEH"      "LEO"      "LEP"      "LEPPOT"   "LES"
## [187] "LEST"     "LEUC"     "LF"       "LFPR"     "LHP"      "LPRDT"
## [193] "LQUALT"   "LUR"      "LURBLS"   "LURNAT"   "LURTRSH"  "LWW"
## [199] "MEI"      "MEP"      "MFPT"     "N16"      "PCDR"     "PCENG"
## [205] "PCENGR"   "PCER"     "PCFR"     "PCFRT"    "PCHR"     "PCNIA"
## [211] "PCOR"     "PCPI"     "PCPIX"    "PCSTAR"   "PCXFE"    "PGDP"
## [217] "PGFIR"    "PGFL"     "PGFOR"    "PGSIR"    "PGSL"     "PGSOR"
## [223] "PHOUSE"   "PHR"      "PIC4"     "PICNGR"   "PICNIA"   "PICX4"
## [229] "PICXFE"   "PIECI"    "PIGDP"    "PIPL"     "PIPXNC"   "PITARG"
## [235] "PITRSH"   "PKIR"     "PKPDR"    "PL"       "PLMIN"    "PLMINR"
## [241] "PMO"      "PMP"      "POIL"     "POILR"    "POILRT"   "PPDR"
## [247] "PPIR"     "PPSR"     "PTR"      "PWSTAR"   "PXB"      "PXG"
## [253] "PXNC"     "PXP"      "PXR"      "QEC"      "QECD"     "QECO"
## [259] "QEH"      "QEPD"     "QEPI"     "QEPS"     "QKIR"     "QLEOR"
## [265] "QLEP"     "QLF"      "QLFPR"    "QLHP"     "QLWW"     "QPCNIA"
## [271] "QPL"      "QPMO"     "QPXG"     "QPXNC"    "QPXP"     "QYNIDN"
## [277] "RBBB"     "RBBBE"    "RBBBP"    "RCAR"     "RCCD"     "RCCH"
## [283] "RCGAIN"   "REQ"      "REQP"     "RFF"      "RFFALT"   "RFFE"
## [289] "RFFFIX"   "RFFGEN"   "RFFINTAY" "RFFMIN"   "RFFRULE"  "RFFTAY"
## [295] "RFFTLR"   "RFNICT"   "RFRS10"   "RFYNIC"   "RFYNIL"   "RG10"
## [301] "RG10E"    "RG10P"    "RG30"     "RG30E"    "RG30P"    "RG5"
## [307] "RG5E"     "RG5P"     "RGFINT"   "RGW"      "RME"      "RPD"
## [313] "RRFFE"    "RRFIX"    "RRMET"    "RRTR"     "RSPNIA"   "RSTAR"
## [319] "RTB"      "RTBE"     "RTINV"    "RTPD"     "RTPI"     "RTPS"
## [325] "RTR"      "T47"      "TAPDAD"   "TAPDD"    "TAPDDP"   "TAPDS"
## [331] "TAPDT"    "TAPSAD"   "TAPSDA"   "TAPSSL"   "TFCIN"    "TFDIV"
## [337] "TFIBN"    "TFPN"     "TFSIN"    "TRFCI"    "TRFCIM"   "TRFIB"
```

```
## [343] "TRFP"     "TRFPM"    "TRFPT"    "TRFPTX"   "TRFSI"    "TRSCI"
## [349] "TRSCIT"   "TRSIB"    "TRSIBT"   "TRSP"     "TRSPP"    "TRSPT"
## [355] "TRSPTX"   "TRSSI"    "TRSSIT"   "TRYH"     "TSCIN"    "TSIBN"
## [361] "TSPN"     "TSSIN"    "UCES"     "UCFS"     "UEMOT"    "UEMP"
## [367] "UFCBR"    "UFNIR"    "UFPCM"    "UFPXM"    "UFTCIN"   "UGFDBT"
## [373] "UGSDBT"   "UGSINT"   "UGSSUB"   "UJCCA"    "UJCCAC"   "UJYGFE"
## [379] "UJYGFG"   "UJYGSE"   "UJYGSG"   "ULEF"     "ULES"     "UPCPI"
## [385] "UPCPIX"   "UPGFL"    "UPGSL"    "UPKPD"    "UPMP"     "UPXB"
## [391] "UQPCT"    "UVEOA"    "UVPD"     "UVPI"     "UVPS"     "UXBT"
## [397] "UXENG"    "UYD"      "UYHI"     "UYHLN"    "UYHPTN"   "UYHSN"
## [403] "UYHTN"    "UYL"      "UYNI"     "UYNICP"   "UYP"      "UYSEN"
## [409] "VEO"      "VEOA"     "VPD"      "VPI"      "VPS"      "WDNFCN"
## [415] "WPO"      "WPON"     "WPS"      "WPSN"     "XB"       "XBN"
## [421] "XBO"      "XBT"      "XENG"     "XFS"      "XFSN"     "XG"
## [427] "XGAP"     "XGAP2"    "XGDE"     "XGDEN"    "XGDI"     "XGDIN"
## [433] "XGDO"     "XGDP"     "XGDPN"    "XGDPT"    "XGDPTN"   "XGN"
## [439] "XGO"      "XGPOT"    "XP"       "XPN"      "YCSN"     "YDN"
## [445] "YGFSN"    "YGSSN"    "YH"       "YHGAP"    "YHIBN"    "YHIN"
## [451] "YHL"      "YHLN"     "YHP"      "YHPCD"    "YHPGAP"   "YHPNTN"
## [457] "YHPSHR"   "YHPTN"    "YHSHR"    "YHSN"     "YHT"      "YHTGAP"
## [463] "YHTN"     "YHTSHR"   "YKIN"     "YKPDN"    "YKPSN"    "YMSDN"
## [469] "YNICPN"   "YNIDN"    "YNIIN"    "YNILN"    "YNIN"     "YNISEN"
## [475] "YPN"      "ZDIVGR"   "ZECD"     "ZECO"     "ZEH"      "ZGAP05"
## [481] "ZGAP10"   "ZGAP30"   "ZGAPC2"   "ZLHP"     "ZPI10"    "ZPI10F"
## [487] "ZPI5"     "ZPIB5"    "ZPIC30"   "ZPIC58"   "ZPICXFE"  "ZPIECI"
## [493] "ZRFF10"   "ZRFF30"   "ZRFF5"    "ZVPD"     "ZVPI"     "ZVPS"
## [499] "ZXBD"     "ZXBI"     "ZXBS"     "ZYH"      "ZYHP"     "ZYHPST"
## [505] "ZYHST"    "ZYHT"     "ZYHTST"   "ZYNID"
```

```
table(varinfo$vtype)

##
##   B B.1 B.2 B.3 B.4 B.6 B.7   I I.3 X.1 X.2 X.3 X.4 X.5 X.7
##  54  12   1   1  73   1   4 239   1   3  72  34   6   1   6

table(varinfo$vrule)

##
##       A
## 126 382

str(varinfo$sector)

##  chr [1:508] "sector_c.5" "" "" "" "" "" "" "" "" ...

summary(varinfo$var7)
```

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.    NA's
##     1.0     1.0     4.0     2.7     4.0     5.0       4
```

```
table(varinfo$var7)
```

```
##
##   1   2   3   4   5
## 201  25   3 274   1
```

```
table(varinfo$stoch)
```

```
##
##  FN  GV  IN  IS  LB  NO  OT  PR  RW  ST
##  12  15   4  10   7 437  10   9   2   2
```

```
table(varinfo$var8)
```

```
##
##   0   1   2   7
## 413  90   1   1
```

```
table(varinfo$var9)
```

```
##
##   0   1   2   3   4
## 370  24  80  21  10
```

```
table(varinfo$decomp)
```

```
##
##  1  2  3  4  5  6  7  8  9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25
## 30  2 33  5  5  4 12  4  7  7 11  3 24 49 34  8  8 30  2 11 16 53 44 26 17
## 26 27 28 29
## 32 18 12  1
```

```
table(varinfo$vtype,varinfo$stoch)
```

```
##
##        FN  GV  IN  IS  LB  NO  OT  PR  RW  ST
##   B     0   0   0   0   6  46   0   0   0   2
##   B.1   3   5   0   0   0   2   0   2   0   0
##   B.2   0   0   0   0   0   1   0   0   0   0
##   B.3   0   0   0   0   0   1   0   0   0   0
##   B.4   9  10   4  10   0  21  10   7   2   0
##   B.6   0   0   0   0   0   1   0   0   0   0
##   B.7   0   0   0   0   1   3   0   0   0   0
##   I     0   0   0   0   0 239   0   0   0   0
```

```
##   I.3   0   0   0   0   0   1   0   0   0   0
##   X.1   0   0   0   0   0   3   0   0   0   0
##   X.2   0   0   0   0   0  72   0   0   0   0
##   X.3   0   0   0   0   0  34   0   0   0   0
##   X.4   0   0   0   0   0   6   0   0   0   0
##   X.5   0   0   0   0   0   1   0   0   0   0
##   X.7   0   0   0   0   0   6   0   0   0   0

table(varinfo$var7,varinfo$var9)

##
##       0   1   2   3   4
##   1 201   0   0   0   0
##   2   4   0  21   0   0
##   3   2   0   0   1   0
##   4 161  24  59  20  10
##   5   1   0   0   0   0

table(varinfo$var7,varinfo$stoch)

##
##      FN  GV  IN  IS  LB  NO  OT  PR  RW  ST
##   1  10   9   0   0   5 173   0   2   1   1
##   2   2   0   0   0   0  23   0   0   0   0
##   3   0   0   0   0   0   3   0   0   0   0
##   4   0   6   4  10   2 233  10   7   1   1
##   5   0   0   0   0   0   1   0   0   0   0

table(varinfo$var8,varinfo$stoch)

##
##      FN  GV  IN  IS  LB  NO  OT  PR  RW  ST
##   0  12   9   0   0   5 383   0   2   1   1
##   1   0   6   3  10   2  50  10   7   1   1
##   2   0   0   0   0   0   1   0   0   0   0
##   7   0   0   1   0   0   0   0   0   0   0

table(varinfo$var9,varinfo$stoch)

##
##      FN  GV  IN  IS  LB  NO  OT  PR  RW  ST
##   0  12  15   4  10   7 299  10   9   2   2
##   1   0   0   0   0   0  24   0   0   0   0
##   2   0   0   0   0   0  80   0   0   0   0
##   3   0   0   0   0   0  21   0   0   0   0
##   4   0   0   0   0   0  10   0   0   0   0
```

Here we create the support file from the data.frame.

```
write.csv(varinfo,"support/varinfo.csv")
```

0.2 stdver_coeffs.txt

```
raw = readLines("frbus_package/mods/stdver_coeffs.txt")
str(raw)

##  chr [1:173] "" ...
```

```
coeffs = lapply(raw[which(raw!="" & raw!="theend")], function(x) strsplit(x, "\t"))
coeffs = data.frame(
           name = unlist(lapply(coeffs, function(x) x[[1]][1])),
           len = as.numeric(lapply(coeffs, function(x) x[[1]][2])),
           vec = unlist(lapply(coeffs, function(x) x[[1]][3])),
             stringsAsFactors = FALSE)
coeffs$vec = lapply(coeffs$vec, function(x) as.numeric(strsplit(x, ",")[[1]]))
row.names(coeffs) = coeffs$name
coeffs["y_emo","vec"]

## [[1]]
## [1]  0.01701497 -0.19847532  1.35232826  1.67397668  0.35662832  0.38031136

coeffs["y_emo","vec"][[1]][3]

## [1] 1.352328

coeffs["y_emo","len"]

## [1] 6

length(coeffs["y_emo","vec"][[1]])

## [1] 6
```

```
# rownames(coeffs)
# coeffs$vec
# coeffs = subset(coeffs, select=c(vec))
# str(coeffs)
# coeffs["y_emo"]
# coeffs$vec["y_emo"]
```

```
write.csv(coeffs,"support/coeffs.csv")

## Error in .External2(C_writetable, x, file, nrow(x), p, rnames, sep,
eol, :  unimplemented type 'list' in 'EncodeElement'
```

0.3 stdver_eqs.txt

```
raw = readLines("frbus_package/mods/stdver_eqs.txt")
eqs = paste(raw[which(raw!="" & raw!="theend")], collapse="<endline>")
eqs = gsub("_<endline>", "", eqs)
eqs = gsub("[[:space:]]+", "", eqs)
eqs = strsplit(eqs, "<endline>")
eqs = eqs[[1]]
names = toupper(gsub(":.*$", "", eqs))
eqs = gsub("^.*:", "", eqs)
stdver = data.frame(eqs, row.names = names, stringsAsFactors = FALSE)
str(stdver)

## 'data.frame': 386 obs. of  1 variable:
##  $ eqs: chr  "d(log(ceng),0,1)-ceng_aerr=y_ceng(1)*(log(ceng(-1))-log(xg(-1)*veoa(-1)))+y_ceng

stdver[c("CENG","PGDP"),"eqs"]

## [1] "d(log(ceng),0,1)-ceng_aerr=y_ceng(1)*(log(ceng(-1))-log(xg(-1)*veoa(-1)))+y_ceng(2)*d(log
## [2] "pgdp-pgdp_aerr=100*xgdpn/xgdp"
```

```
write.csv(eqs,"support/eqs.csv")
```

0.4 Chunks

0.5 Index