

### Help

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#if defined(PremiaCurrentVersion) && PremiaCurrentVersion <
    (2007+2) //The "#else" part of the code will be freely av
    ailable after the (year of creation of this file + 2)
#else

#include <stdlib.h>
#include "currentzcb.h"
#include "optype.h"

/* defined in premia_obj.c */
extern char premia_data_dir[MAX_PATH_LEN];
extern char *path_sep;

static FILE* Entrees;                /* File variable of
    the code */
static double* tm;                   /* Times T for whic
    h P(0,T) is read in the file */
static double* Pm;                   /* Values of P(0,tm
    ) read in the file */
static int Nvalue;                   /* Number of value
    s read for Pm */

int lecturehk (char* init)
{
    int i;
    char ligne[20];
    char* pligne;
    double p, tt;
    char data[MAX_PATH_LEN];

    sprintf(data, "%s%s%s", premia_data_dir, path_sep, init);
    Entrees=fopen(data, "r");

    if (Entrees==NULL) {printf("LE FICHER N'A PU ETRE OUVERT
        . VERIFIER LE CHEMIN{n");} else {}
```

```

i=0;
pligne=ligne;

Pm= malloc(100*sizeof(double));
tm= malloc(100*sizeof(double));

while(1)
{
    pligne=fgets(ligne, sizeof(ligne), Entrees);
    if(pligne==NULL) break;
    else{
        sscanf(ligne, "%lf t=%lf", &p, &tt);

        Pm[i]=p;
        tm[i]=tt;
        i++;
    }

}

fclose( Entrees);

return i;
}

double bond (double T, double FM)
{
    double POT;
    int i=0;

    if(T>0)
    {

        if (FM>0) {POT=exp(-FM*T);}
        else
        {
            while(tm[i]<T && i<Nvalue){i=i+1;}

            if(i==0){POT=1*(1-T/tm[0]) + Pm[0]*(T/tm[0]);}
            else

```

```

        {
            if(i<Nvalue)
            {
                POT=Pm[i-1]*(tm[i]-T)/(tm[i]-tm[i-1]) +
                Pm[i]*(T-tm[i-1])/(tm[i]-tm[i-1]);
            }
            else
            {
                POT=Pm[i-1]+(T-tm[i-1])*(Pm[i-1]-Pm[i-2])
                /(tm[i-1]-tm[i-2]);
            }
        }
    }
else
{
    POT=1;
}
return POT;
}

```

```

double CurrentZCB (double T, int flat_flag, double r_flat,
    char* init)
{
    if (flat_flag==0) return exp(-r_flat*T);

    Nvalue=lecturehk(init);
    if (T > tm[Nvalue-1])
    {
        printf("\nError : P(0,T) can be deduced from datas on
        file only for T<=%f\n", tm[Nvalue-1]);
        printf("But here T=%f !!\n", T);
        return -1;
    }

    return bond(T,-1);
}
#endif //PremiaCurrentVersion

```

## References