TRUTH IN SAVINGS: A TERRIFIC TEACHING AID

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Teachers and students can enjoy the opportunity to explore, study, and calculate savings account interest after June 21, 1993 when the Truth in Savings Act (TISA) becomes effective. The TISA will make savings terminology so clear that teachers, students, and bankers can "talk interest" without becoming frustrated and confused. The Annual Percentage Yield (APY) will now have a uniform meaning, and "effective rate," "annual yield," "rate," "yield," and other terms that have the same or another meaning will be gone. Also, consumers will know how interest is figured and should be able to test their understandings by verifying computed figures in bank statements.

This dramatic change in banking practice provides the ultimate teachable moment. Students can apply what they are learn in class as they study the bank's literature for their personal bank account. Students may also discover shortcomings in the law and recommend changes.

This paper is organized in three sections. The first describes the features of the TISA. The next section suggests activities that will help students understand and apply the features of the Act and the last section discusses some shortcomings of the new law.

Truth in Savings Act

On December 19, 1991 President Bush signed into law the FDIC Improvement Act of 1991. The Act was passed as part of legislation authorizing the $30 billion needed to avert a bank crisis. It directed the Federal Reserve Board (FRB) to write regulations for TISA (Truth in Savings Act [TISA], 1991).

The regulatory process was undertaken with great care, and after 3 months the Board issued for public comment a 132-page set of proposed regulations and explanations (Regulation DD, 1992). Comments came from 1,416 respondents, but only 20 could be identified as from consumers. The financial community offered much for the FRB staff to consider, and they greatly influenced the preparation of the 267-page report to the Board. The Board voted 3

to 2 in September to approve final regulations to become effective March 21, 1993 (TISA, 1991). Later, Congress voted to postpone the effective date until June 21, 1993. Meanwhile, bank lobbyists have waged a war on regulation and red tape, intending to convince the new administration that Truth in Savings and other consumer protections are unnecessary and too expensive.

At the time of this writing, the June 21 effective date is on schedule (TISA, 1991)). One can only wonder why industry leaders were not better prepared to implement the Act's provisions. The concept of Truth in Savings was first introduced in 1971 (H.R. 8365 & S. 1848). After 20 years, one would think that bankers would have recognized that interest paid on savings needs to be in described in clearer, well defined, and non-deceptive terms. Depositors need to be able to: (a) make accurate comparisons between accounts, (b) get full accounting from the bank as to charges, fees, and interest computations, and (c) verify the accuracy of bank performance. This has not happened to date. Yet, TISA as enacted will enable teachers and students to "put the pencil" to savings account figures and discover what they do and do not know. Students will learn to identify realistic questions about their own accounts and should be able to carry on a satisfying and educational discourse with their bankers.

Fundamentals of Interest Calculations

A pocket financial calculator is a useful tool for mastering the basics of interest calculations (Goetting, 1992). Calculators in the $20 price range include the TI-BA35 or Radio Shack EC-5010. The calculator should have the five essential keys:

N (the number of compounding periods in a year);

%i (the interest paid at the end of each period);

PV (the present value, the principal amount initially);

FV (the future value, the initial principal amount plus the interest paid and accrued after "N" compoundings; and

PMT (the amount of each payment when making multiple payments). Since the examples given here deal with single payments, this value should be set at zero and will not be used in the examples that follow.

Students can use the manual that accompanies the calculator to learn other facets of the fascinating world of finances and the time-price value of money. The calculator frees students from dependence on tables and increases their understanding of finances.

The following examples demonstrate one basic rule of financial calculators: **enter values for three of the four keys and compute the fourth value by pressing the compute [CPT] key**. For example, if $100 [100=PV] is deposited into an account that pays 5% [5=%i] compounded annually [1=N], what will it be worth at the end of the year? Compute [CPT] future value [FV] and the answer is 105, or $100 plus $5 interest.

The calculator also allows one to calculate how much will need to be deposited [PV] in an account paying 5% [%i] to have $105 [FV] after 1 year [N]. After solving for PV, one can rearrange the problem and solve for [N] and then for [%i]. This exercise has exemplified the rule.

Compounding is easily handled by the financial calculator. If an account paying 5% interest compounds semi-annually, the keystrokes are as follows: [2=N], [5÷2=%i], [100=PV], and [CPT] [FV]. The result is 105.06, or an interest payment of $5.06. If interest compounds daily, then [365=N], [5÷365=%i], and [CPT] [FV]. The answer if 105.1267 and the interest earned is $5.13 or 13¢ higher than for simple annual interest and 7¢ more than from semi-annual compounding.

Annual Percentage Yield

The Truth in Savings Act requires any advertised rate to be the Annual Percentage Yield (APY). The law defines the Annual Percentage Yield as "...the total amount of interest that would be received on a $100 deposit ... for a 365-day period, expressed as a percentage...." (TISA, 1991) exactly as we have just computed it. This conforms to common sense, that $5 earned on $100 in 365 days translates to 5 per 100 or 5% per annum since there are 365 days in a year.

Therefore, if interest is compounded annually, the 5% APY equals the 5% simple nominal annual percentage rate, commonly known as APR. But, if interest is compounded semi-annually, depositors may be miffed when they get only $2.47 in interest after 6 months. The financial calculator can be used to explain why the depositor gets less than half of $5 for half a year. Using the calculator, let [105=FV], [100=PV], [2=N], and [CPT] [%i] to be 2.4695. The paying rate shifts from being 5% per annum to 2.4695% each six months. Therefore, the amount of interest earned for one 6-month period is $2.4695. If the interest is left to accrue in the account for another 6 months, the key sequence is [102.4695=PV], [1=N], [2.4695=i%], and [CPT] [FV]. The total in the account at the end of two six-month periods is $105.

The paying rate, the rate paid each compound period, is not required to be disclosed by TISA. For some unfathomable reason, the true rate actually paid is not disclosed; only "annualized" rates are revealed. But the true paying rates [%i] can be discovered by using the financial calculator. This discovery process can make teaching/learning fun!

If interest were compounded monthly and the APY remains 5%, [12=N], [100=PV], [105=FV], and [CPT] [%i]. The answer is .4074123 per month. This monthly rate can be annualized by multiplying by 12 to calculate a 4.889% APR. This makes sense because a lower APR simple annual rate is needed to earn $5 if compounded monthly. An example of this process is given in the APY = 5% table in the book, *Truth in Savings* (Morse, 1992). The APR decreases as frequency of compounding increases; ask your students how this could be.

The law defines the "Annual Rate of Simple Interest" as "the annualized rate of interest paid with respect to each compounding period, expressed as a percentage, and may be referred to as the annual percentage rate" (TISA, 1991). This is calculated as %i times N. Therefore an APY of 5% compounded daily would have a Periodic Percentage Rate [%i] of .0133681 which can be annualized by multiplying by 365 for an Annual Percentage Rate (APR) of 4.88%.

The author (Morse, 1986) originally proposed that all rates could and should be expressed as cents per $100 per day, which in this case would be 1.33681, cents-ible interest. Such rates would be easy to understand. Cents are real, $100 is a convenient unit, and everyone knows a day is 24 hours. No longer would we need to teach percentages and argue about whether annual means 360, 365, 366, or 372 days. Cents-ible interest was not adopted and we must now cope with APY.

We almost succeeded on making annual equal 365 days. The Federal Reserve Board wants to allow banks to pay a lower daily rate in leap years and even has proposed a special formula for use in calendar years of 366 days. Why wouldn't a formula that works satisfactorily for 1, 2, 100, 360, 365, and 380 days also work for 366 days? Why is a different formula necessary? Think about this and you may come to appreciate the mental barriers to achieving simple and sensible legislation!

Limitations of TISA

As teachers and students pursue the verification of savings accounts, the limitations of the TISA will become evident. Some of these are as follows:

Tolerance for Errors

Banks are required by TISA to post rates to only two decimal places. Gas is priced to three decimal places and the calculator carries eight places. This procedure makes it difficult to know exactly what the bank's true rate is.

Rate Paid

The bank is not required to tell the actual rate paid; only annualized rates must be disclosed. It will be a challenge to discover the Periodic Percentage Rate (%i) figure for savings. Although the Periodic Percentage Rate is fully disclosed for bank card credit accounts, it is not for bank savings accounts. Why not?

Dates

Banks are not required to tell the exact date when interest starts. This is not problem if interest is paid on daily balances as the law requires. Banks are allowed to pay interest on the "collected balance," but consumers don't know the date when their deposits are collected upon. Why not tell?

Average versus Daily Balance

The law requires payment on daily balances, but the regulators allow an option to pay on the "average daily balance." This may present a computational challenge which must be mastered. If this intimidates the depositor, the banker's allegation that few if any customers ever verify their accounts will be fulfilled.

Tiered Rates

Tiered rates vary with the balance in the account, such as 2% on balances under $2,500 and 4% on balances over $2,500. Another variation varies with time, such as 6% for the first 6 months and 2% thereafter. If you master the intricacies of tiered accounts, you will probably decide there are better places to entrust your savings.

Conclusions

For the first time, savings accounts will be sufficiently described so that teachers and students can launch into a rewarding exercise to learn how interest can be calculated and how it is figured on their own savings accounts. The best teaching aids are an inexpensive pocket calculator, inquisitive minds, and student willingness to challenge facts and authorities. Interest calculations should be a manageable subject after TISA becomes effective. Previously there were 7.8 million combinations of ways to figure interest and the task was impossible.

Consumer education teachers often emphasize "consumer rights" to the neglect of "consumer responsibility." The Truth in Savings Act provides a golden opportunity to use this right to information to exercise responsible savings decisions.

References

Goetting, M.A. (1992). Calculating teens, *The Journal of Consumer Education,* 10, 44-48.

H.R. 8365, __th Congress, __ Session (1971).

Morse, R. L. D. (1978). *Check Your Interest*. Manhattan KS: Morse Publications.

Morse, R. L. D. (1986). MITE - Make Interest Teaching Easy with Cents-ible Interest, *The Journal of Consumer Education*, 4, 9-11.

Morse, R. L. D. (1992). *Truth in Savings*. Manhattan, KS: Family Economics Trust Press.

Regulation DD, § 57 Federal Register § 43337 (1992).

S. 1848, __th Congress, __Session (1971).

Truth in Savings Act of 1991, § 21, U.S.C. § 4301 er seq. (1991). Public Law 102-550 106 Stat 3672 ??

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Notes

Check Your Interest is available from Morse Publications, 2429 Lookout Drive, Manhattan, KS 66502. $3.50 pp.

Truth in Savings is available from Family Economics Trust Press, Box 1009, Manhattan, KS 66502, $11.95 pp.