COLEMAN FUNG
RISK MANAGEMENT
RESEARCH CENTER

Working Paper # 2013 -04

Equity Risk Premium and Insecure Property Rights
(revised)

Konstantin Magin, University of California Berkeley

February 11, 2013

**University of California
Berkeley**

Equity Risk Premium and Insecure Property Rights[*]

Konstantin Magin[†]

February 11, 2013[‡]

[*]This research was supported by a grant from the Coleman Fung Risk Management Research Center. I am very grateful to Bob Anderson for his kind support, encouragement and insightful advice. I also thank Ellen McGrattan and Mark Rubinstein for their very helpful comments and suggestions.

[†]Coleman Fung Risk Management Research Center and Haas School of Business, 502 Faculty Bldg., #6105, University of California Berkeley, CA 94720-6105, USA, e-mail: magin@berkeley.edu.

[‡]Revised from Konstantin Magin (2009), Equity Risk Premium and Insecure Property Rights, The Coleman Fung Risk Management Research Center Working Paper # 2009-01.

Abstract

How much of the equity risk premium puzzle can be attributed to the insecure property rights of shareholders? This paper develops a version of the CCAPM with insecure property rights (stochastic taxes). The model implies that the current expected equity premium can be reconciled with a coefficient of relative risk aversion of 3.76, thus resolving the equity premium puzzle.

Keywords: Stochastic Taxation, Equity Premium, Risk Aversion, CCAPM, Property Rights

JEL Classification: G1; G2

1. **Introduction**

The focus of this paper is to model and quantify the economic impact of insecure property rights on the equity risk premium. It should be noted that insecure property rights manifest themselves in many different forms. Here we are interested in insecure property rights that might lead to a collapse in real equity values that would not much affect the real values of bonds, especially government bonds. For example, if the U.S. government were to decide to put extraordinarily heavy taxes on corporate profits, dividends, or capital gains or to impose extraordinarily heavy regulatory burdens on corporations, those policies could redirect a substantial amount of cash flow away from shareholders without affecting bond values. The likelihood of such future tax increases or regulatory burdens narrowly targeted on corporate profits appears to be large enough to reconcile the current expected equity premium with a reasonable coefficient of risk aversion.

Surprisingly, there has been very little research done so far on the effects of stochastic taxes on asset prices. DeLong and Magin (2009) point to social-democratic political risks, such as heavy taxes on corporate profits or heavy regulatory burdens on corporations that could contribute to the size of the equity risk premium. Yet is the chance of future tax increases or regulatory burdens that are narrowly targeted on corporate profits large enough to support the observed equity premium over more than a century? Public finance economists such as Hines (2007) point out that in a world of mobile capital, tax competition restrains governments from pursuing tax policies very different from those of other nations. Therefore, a radical failure of such tax competition would have to be required as well before such burdens are imposed. However, the possibility of well-coordinated simultaneous efforts on the part of national governments to impose heavier regulatory and tax burdens on the supply-side of the economy cannot be ruled out.

Sialm (2008) shows in an excellent empirical paper that aggregate stock valuation levels are related to measures of the aggregate personal tax burden on equity securities. The tax burden is calculated as the ratio of dividend tax per share and taxes on short-term and long-term capital gains per share realized in accordance with historical patterns. That is the tax yield calculated. Moreover, the paper finds that stocks paying a greater proportion of their total returns as dividends face significantly heavier tax burdens than stocks paying no dividends. The paper concludes that these results indicate an economically and statistically significant relation between before-tax abnormal asset returns and effective tax rates. Stocks with heavier tax burdens tend to compensate taxable investors by offering higher before-tax returns.

Sialm (2006) develops a dynamic general equilibrium model to analyze the effects of a flat consumption tax that follows a two-state Markov chain on asset prices. He finds that personal income tax rates have fluctuated considerably since federal income taxes were permanently introduced in the U.S. in 1913. Furthermore, he finds that stochastic consumption taxation affects the after-tax returns of risky and safe assets alike. As taxes change, equilibrium bond and stock prices adjust accordingly. However, stock and long-term bond prices are affected more than T-bills. Under plausible conditions, investors require higher term and equity premia as compensation for the risk introduced by tax changes.

McGrattan and Prescott (2001) developed a dynamic general equilibrium model to analyze the effects of corporate and personal income taxes on asset prices but these taxes are not stochastic. They find that with the large reduction in individual income tax rates, the increased opportunities to hold equity in nontaxed pension plans, and the increases in intangible and foreign capital, theory predicts a large increase in equity prices between 1962 and 2000. In fact, theory correctly predicts a doubling of the value of equity relative to GDP and a doubling of the price-earnings ratio. They conclude that a corollary of this finding is that there is no equity premium puzzle in the postwar period. However, their paper does not calculate the implied coefficient of relative risk aversion.

Edelstein and Magin (2012) examined and estimated the equity risk premium for securitized real estate (U.S. Real Estate Investment Trusts-REITs). By introducing stochastic taxes for equity REITs shareholders, the analysis demonstrates that the current expected after-tax risk premium for REITs generate a reasonable coefficient of relative risk aversion. Employing a range of plausible stochastic tax burdens, the REITs shareholders' coefficient of relative risk aversion is likely to fall within the interval from 4.3 to 6.3, a value significantly lower than those reported in most of the prior studies for the general stock market.

This paper contributes to the literature by developing a version of the CCAPM with insecure property rights. Insecure property rights are modelled by introducing a stochastic tax on the wealth of shareholders, where the aftertax total rate of return on stocks and future consumption are bivariate lognormally distributed. I calculate that the current expected equity premium, calculated by Fama and French, using the dividend growth model, can be reconciled with a coefficient of relative risk aversion of 3.76, thus resolving the equity premium puzzle.

The paper is organized as follows. Section II develops a version of the CCAPM with insecure property rights. Section III provides calculations. Section IV concludes.

2. **Model**

Consider an infinite horizon model with $n-1$ risky assets and the n^{th} risk-free asset. The vector of asset prices is $p_t \in \mathbb{R}^n$ at period t. The vector of dividends is $d_t \in \mathbb{R}_+^n$ at period t. An investor possesses portfolio $z_t \in [0,1]^n$ of assets and consumes $c_t \in \mathbb{R}$ at period t. Let the investor's one-period utility function be $u(c_t)$. Suppose now that τ_t is a stochastic tax imposed on the wealth of stock holders.

Thus, consider the investor's optimization problem:

$$\max_{z_t} \sum_{t=0}^{\infty} b^t E\left[u(c_t)\right], \tag{1}$$

where $0 < b < 1$ and $u(\cdot)$ is such that $u'(\cdot) > 0$ and $u''(\cdot) < 0$,

subject to

$$c_t = (1-\tau_t)\sum_{k=1}^{n-1}(p_{kt}+d_{kt})z_{kt} + (p_{nt}+d_{nt})z_{nt} - \sum_{k=1}^{n} p_{kt}z_{kt+1}.^{1} \quad (2)$$

Taking the first-order condition we obtain

$$-u'(c_t)p_{kt} + bE\left[u'(c_{t+1})\left(1-\tau_{t+1}\right)\left(p_{kt+1}+d_{kt+1}\right)\right] = 0 \text{ for } k = 1, ..., n-1, \quad (3)$$

$$-u'(c_t)p_{nt} + bE\left[u'(c_{t+1})\left(p_{nt+1}+d_{nt+1}\right)\right] = 0. \quad (4)$$

Hence,

$$E\left[\frac{bu'(c_{t+1})}{u'(c_t)}\left(\ \left(1-\tau_{t+1}\right)R_{kt+1}\right)\right] = 1 \text{ for } k = 1, ..., n-1, \quad (5)$$

[1] According to data released by the U. S. Census Bureau in 2008, only 0.4% of all households' net worth is invested in all types of U. S. savings bonds. Moreover, the 2007 mean households' net worth in the U. S. was $556,300. Provided that the 3-month T-bills' real rate of return is only 0.9%, the total tax revenue from the risk-free asset (3-month T-bills) per household is negligibly small: $20 at most.

$$E\left[\frac{bu'(c_{t+1})}{u'(c_t)}\right]R_f = 1. \tag{6}$$

THEOREM *Consider an infinite horizon economy described by* (1) *and* (2)*. We further assume that*

a) Investors have one-period utility function $u(c) = \frac{c^{1-\alpha}}{1-\alpha}$.

b) $\ln((1-\tau_{t+1})\,R_{kt+1})$ *and* $\ln\left(b\left(\frac{C_{t+1}}{C_t}\right)^{-\alpha}\right)$ *are bivariate normally distributed with means*

$$\left(E\left[\ln((1-\tau_{t+1})\,R_{kt+1})\right],\ E\left[\ln\left(b\left(\frac{C_{t+1}}{C_t}\right)^{-\alpha}\right)\right]\right) = (\mu_k, \mu_c)\,,$$

and the variance-covariance matrix

$$V = \begin{pmatrix} \sigma_k^2 & \sigma_{kc} \\ \sigma_{kc} & \sigma_c^2 \end{pmatrix} \text{ for } k = 1, ..., n-1.$$

c) $ln(R_{kt+1})$ *is normally distributed for* $k = 1, ..., n-1$.[2]

[2] Since the sum of lognormally distributed random variables is not lognormally distributed, I will later need to assume that not all risky assets satisfy assumptions b) and c) to allow these assumptions to be imposed on the market portfolio of risky assets.

d) $ln(1-\tau_{t+1})$ is normally distributed.[3]

Then,

$$\underbrace{ln\left(E\left[R_{kt+1}\right]\right) - ln\left(R_f\right) = a \cdot COV\left[\ln(R_{kt+1}),\ \ln\left(\frac{C_{t+1}}{C_t}\right)\right]}_{Traditional\ Relation} +$$

$$+a \cdot COV\left[\ln(1-\tau_{t+1}),\ \ln\left(\tfrac{C_{t+1}}{C_t}\right)\right] - \ln\left(E\left[1-\tau_{t+1}\right]\right) - COV\left[ln\left(R_{kt+1}\right), \ln\left(1-\tau_{t+1}\right)\right],$$

for $k = 1, ..., n-1$.

PROOF: See appendix.

3. Calculations

Using the dividend growth model, Fama and French (2002) estimate the current expected equity premium to be

$$\ln\left(E\left[R_{mt+1}\right]\right) - \ln\left(R_f\right) = 0.0255.$$[4]

Also,

$$COV\left[\ln(R_{mt+1}),\ \ln\left(\tfrac{C_{t+1}}{C_t}\right)\right] = 0.00125,$$

[3]The assumption that $ln(1-\tau_{t+1})$ is normally distributed is natural. It simply assures that $\Pr\left[1-\tau_{t+1} < 0\right] = 0$, i.e., government cannot confiscate more than 100% of your wealth.

[4]Fama and French (2002) demonstrate that the dividend growth model produces a superior measure of the expected equity premium than using the average stock return.

where $R_{mt+1} = 1 + r_{mt+1}$ is the gross rate of return on the market portfolio of risky assets,

$R_f = 1 + r_f$ is the gross risk-free rate of return.

I estimate tax τ_{t+1} imposed on the wealth of stockholders as

$$\tau_{t+1} = \frac{\tau^{d}_{t+1} d_{t+1} + \tau^{SCG}_{t+1} SCG_{t+1} + \tau^{LCG}_{t+1} LCG_{t+1}}{p_{t+1} + d_{t+1}} =$$

$$= \underbrace{\frac{\tau^{d}_{t+1} d_{t+1} + \tau^{SCG}_{t+1} SCG_{t+1} + \tau^{LCG}_{t+1} LCG_{t+1}}{p_t}}_{Tax\ Yield,\ TY_{t+1}} \cdot \underbrace{\frac{p_t}{p_{t+1} + d_{t+1}}}_{1/R_{mt+1}} = \frac{TY_{t+1}}{R_{mt+1}},$$

where

τ^{d}_{t+1} is the dividend tax,

τ^{SCG}_{t+1} is the tax on short-term capital gains,

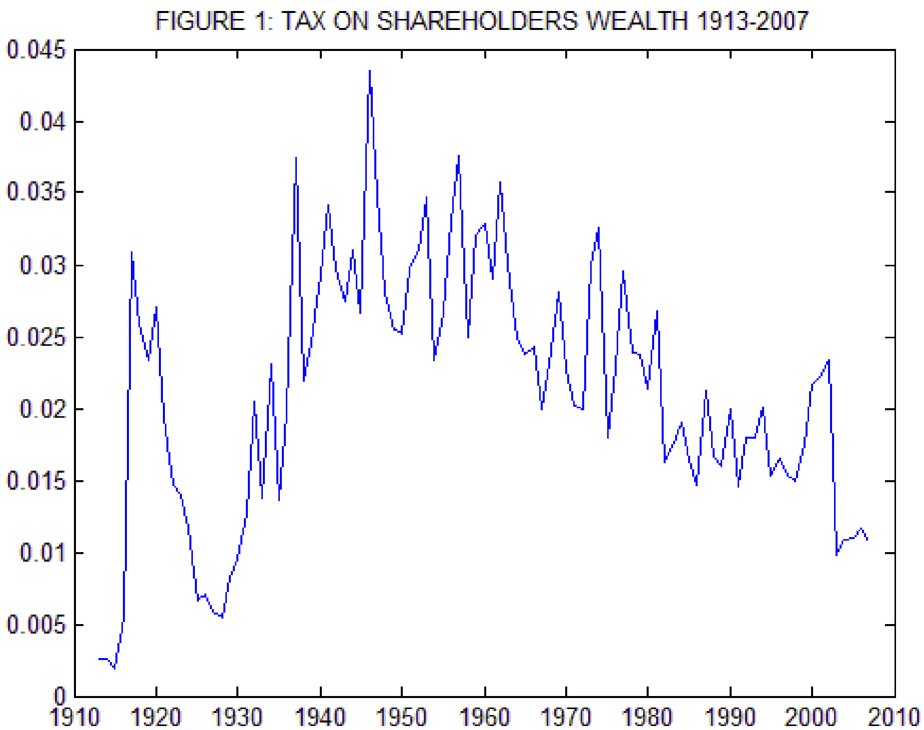
τ^{LCG}_{t+1} is the tax on long-term capital gains,

SCG_{t+1} are realized short-term capital gains,

LCG_{t+1} are realized long-term capital gains, and

TY_{t+1} is the tax yield.[5]

[5] Sialm (2008) estimates the tax yield as $TY_{t+1} = \tau^{d}_{t+1} \cdot 0.045 + \tau^{SCG}_{t+1} \cdot 0.001 + \tau^{LCG}_{t+1} \cdot 0.018$. So, $\frac{d_{t+1}}{p_t} = 0.045$, $\frac{SCG_{t+1}}{p_t} = 0.001$ and $\frac{LCG_{t+1}}{p_t} = 0.018$.



See Figure 1 above. I calculate that for 1913-2007,

$$\ln\left(E\left[1-\tau_{t+1}\right]\right) = -0.0214,$$

$$COV\left[\ln(R_{mt+1}),\ \ln\left(1-\tau_{t+1}\right)\right] = 0.0006,$$

$$COV\left[\ln(1-\tau_{t+1}),\ \ln b\left(\frac{C_{t+1}}{C_t}\right)\right] = 0.0000.$$

The traditional CCAPM without insecure property rights, and with the current expected equity premium of 6%, calculated by Mehra (2003), using simply the average stock return, yields a coefficient of risk aversion of roughly 50:[6]

$$a = \frac{\ln(E[R_{kt+1}]) - \ln(R_f)}{COV\left[\ln(R_{kt+1}),\ \ln\left(\frac{C_{t+1}}{C_t}\right)\right]} =$$

$$= \frac{0.07 - 0.01}{0.00125} = 47.6.$$

Let us first calculate a with the current expected equity premium of 2.55%, calculated by Fama and French (2002), using the dividend growth model and no taxes. I obtain by the Theorem that for an average investor who realizes short-term and long-term gains in accordance with historical patterns, the coefficient of risk aversion is

$$a = \frac{\overbrace{\ln\left(E\left[R_{kt+1}\right]\right) - \ln\left(R_f\right)}^{0.0255}}{\underbrace{COV\left[\ln(R_{kt+1}),\ \ln\left(\frac{C_{t+1}}{C_t}\right)\right]}_{0.00125}} =$$

$$= \frac{0.0255}{0.00125} = 20.40.$$

Let us now also add taxes. Introduction of a stochastic tax τ_t imposed on the wealth from stock holdings creates the new term $\ln\left(E\left[1 - \tau_{t+1}\right]\right) = -0.0214$, reducing a even further:

$$a = \frac{\ln(E[R_{kt+1}]) - \ln(R_f) + \ln(E[1-\tau_{t+1}]) + COV[\ln(R_{kt+1}),\ \ln(1-\tau_{t+1})]}{COV\left[\ln(R_{kt+1}),\ \ln\left(\frac{C_{t+1}}{C_t}\right)\right] + COV\left[\ln(1-\tau_{t+1}),\ \ln\left(\frac{C_{t+1}}{C_t}\right)\right]} =$$

$$= \frac{0.0255 - 0.0214 + 0.0006}{0.00125 + 0.0000} = 3.76.$$

[6] Mehra (2003).

Since most of the studies indicate a coefficient of risk aversion between 2 and 4, $a = 3.76$ resolves the puzzle.

4. Conclusion

This paper develops a version of the CCAPM with insecure property rights. Insecure property rights are modelled by introducing a stochastic tax on the wealth of shareholders. The likelihood of future tax increases or regulatory burdens narrowly targeted on corporate profits appears to be large enough to reconcile the current expected equity premium with a reasonable coefficient of risk aversion. I calculate that the current expected equity premium can be reconciled with a coefficient of relative risk aversion of 3.76, thus resolving the equity premium puzzle.

Appendix A: Proof of Theorem

PROOF: We have for $k = 1, ..., n-1$,

$$\mu_k = E\left[ln((1-\tau_{t+1})\, R_{kt+1})\right] = E\left[ln(R_{kt+1})\right] + E\left[ln(1-\tau_{t+1})\right].$$

So,

$$\mu_k = E\left[ln(R_{kt+1})\right] + E\left[ln(1-\tau_{t+1})\right].$$

Also, for $k = 1, ..., n-1$,

$$\sigma_k^2 = VAR\left[ln((1-\tau_{t+1})\,R_{kt+1})\right] = VAR\left[ln\left(R_{kt+1}\right) + ln\left(1-\tau_{t+1}\right)\right] =$$

$$= VAR\left[ln\left(R_{kt+1}\right)\right] + VAR\left[ln\left(1-\tau_{t+1}\right)\right] + 2\cdot COV\left[ln\left(R_{kt+1}\right), ln\left(1-\tau_{t+1}\right)\right].$$

Therefore,

$$\sigma_k^2 = VAR\left[ln\left(R_{kt+1}\right)\right] + VAR\left[ln\left(1-\tau_{t+1}\right)\right] + 2\cdot COV\left[ln\left(R_{kt+1}\right),\, ln\left(1-\tau_{t+1}\right)\right].$$

At the same time, for $k = 1, ..., n-1$,

$$\begin{gathered}\sigma_{kc} = COV\left[ln((1-\tau_{t+1})\,R_{kt+1}),\;\; \ln\left(b\left(\frac{C_{t+1}}{C_t}\right)^{-\alpha}\right)\right] = \\ = COV\left[ln(R_{kt+1}) + ln(1-\tau_{t+1}),\;\; \ln\left(b\left(\frac{C_{t+1}}{C_t}\right)^{-\alpha}\right)\right] = \\ = -a\cdot COV\left[\ln(R_{kt+1}), \ln\left(\frac{C_{t+1}}{C_t}\right)\right] - a\cdot COV\left[ln(1-\tau_{t+1}),\;\; \ln b\left(\frac{C_{t+1}}{C_t}\right)\right]\end{gathered}$$

Thus,

$$\sigma_{kc} = -a\cdot COV\left[\ln(R_{kt+1}), \ln\left(\frac{C_{t+1}}{C_t}\right)\right] - a\cdot COV\left[ln(1-\tau_{t+1}),\;\; \ln b\left(\frac{C_{t+1}}{C_t}\right)\right].$$

Now, using Rubinstein (1976) we obtain

$$\mu_k + \frac{1}{2}\sigma_k^2 - ln\left(R_f\right) = -\sigma_{kc} \quad \text{for } k = 1, ..., n-1.$$

So,

$$E\left[ln(1-\tau_{t+1})\right] + E\left[ln(R_{kt+1})\right] +$$

$$\frac{1}{2}\left(VAR\left[ln\left(R_{kt+1}\right)\right] + VAR\left[ln\left(1-\tau_{t+1}\right)\right] + 2 \cdot COV\left[ln\left(R_{kt+1}\right), ln\left(1-\tau_{t+1}\right)\right]\right) -$$

$$-ln\left(R_f\right) =$$

$$= a \cdot COV\left[\ln(R_{kt+1}), \ln\left(\frac{C_{t+1}}{C_t}\right)\right] + a \cdot COV\left[ln(1-\tau_{t+1}), \;\; \ln b\left(\frac{C_{t+1}}{C_t}\right)\right].$$

Therefore,

$$E\left[ln(R_{kt+1})\right] + \frac{VAR[ln(R_{kt+1})]}{2} - ln(R_f) = a \cdot COV\left[\ln(R_{kt+1}), \ln\left(\frac{C_{t+1}}{C_t}\right)\right] +$$

$$a \cdot COV\left[ln(1-\tau_{t+1}), \;\; \ln b\left(\frac{C_{t+1}}{C_t}\right)\right] -$$

$$-E\left[ln(1-\tau_{t+1})\right] - \frac{1}{2}VAR\left[ln\left(1-\tau_{t+1}\right)\right] - COV\left[ln\left(R_{kt+1}\right), ln\left(1-\tau_{t+1}\right)\right]$$

But by normality of $ln(R_{kt+1})$ and $ln(1-\tau_{t+1})$ I obtain

$$ln\left(E\left[R_{kt+1}\right]\right) = E\left[ln(R_{kt+1})\right] + \frac{1}{2}VAR\left[ln\left(R_{kt+1}\right)\right]$$

and

$$ln\left(E\left[1-\tau_{t+1}\right]\right) = E\left[ln(1-\tau_{t+1})\right] + \frac{1}{2}VAR\left[ln\left(1-\tau_{t+1}\right)\right].$$

Hence,

$$ln\left(E\left[R_{kt+1}\right]\right) - ln(R_f) = a \cdot COV\left[\ln(R_{kt+1}), \ln\left(\frac{C_{t+1}}{C_t}\right)\right] +$$

$$+a \cdot COV\left[ln(1-\tau_{t+1}),\ \ \ln b\left(\frac{C_{t+1}}{C_t}\right)\right] - ln\left(E\left[1-\tau_{t+1}\right]\right) -$$

$$COV[ln\left(R_{kt+1}\right), ln\left(1-\tau_{t+1}\right)]. \blacksquare$$

Appendix B: Data

For the period 1913−1965 the data for the average marginal dividend, short-term and long-term capital gains tax rates is not available. So for that period the average marginal federal dividend, short-term and long-term capital gains tax rates are calculated as follows. I assume that the federal dividend tax τ_t^d and the short-term gains tax τ_t^{SCG} are equal and the rate of taxation is equal to the average income tax rate $\frac{LT_t+HT_t}{2}$, where LT_t is the lowest income tax rate and HT_t is the highest income tax rate. So

$$\tau_t^d = \tau_t^{SCG} = \frac{LT_t+HT_t}{2}.$$

At the same time, using NBER data for the period of 1966−2006, I obtained that on average the long-term capital gains federal tax rate is only 63.55% of the short-term capital gains federal tax rate. That is

$$\tau_t^{LCG} = 0.6355 \cdot \tau_{t+1}^{SCG}.$$

Moreover, according to Sialm (2008), on average state taxes are 7.02% of federal tax. Therefore, for the period 1913−1965 I estimated the tax yield as

$$TY_{t+1} = 1.0702 \cdot \left(\tau^{d}_{t+1} \cdot 0.045 + \tau^{SCG}_{t+1} \cdot 0.001 + \underbrace{0.6355 \cdot \tau^{SCG}_{t+1}}_{\tau^{LCG}_{t}} \cdot 0.018 \right).$$

For the period 1966−1978 the data for the average marginal federal dividend, short-term and long-term capital gains tax rates is available from the NBER website.[7] So for the period 1966−1978 I estimated the tax yield as

$$TY_{t+1} = 1.0702 \cdot \left(\tau^{d}_{t+1} \cdot 0.045 + \tau^{SCG}_{t+1} \cdot 0.001 + \tau^{LCG}_{t+1} \cdot 0.018 \right),$$

where

τ^{d}_{t+1} is the average marginal federal dividend tax,

τ^{SCG}_{t+1} is the average marginal federal tax on short-term capital gains,

τ^{LCG}_{t+1} is the average marginal federal tax on long-term capital gains.

For 1979 the data for the average marginal federal plus state dividend, short-term and long-term capital gains tax rates is available from the NBER website.[8] So for 1979 I estimated the tax yield as

[7] www.nber.org/~taxism/marginal-tax-rates/federal.html

[8] www.nber.org/~taxism/marginal-tax-rates/plusstate.html

$$TY_{t+1} = \tau^d_{t+1} \cdot 0.045 + \tau^{SCG}_{t+1} \cdot 0.001 + \tau^{LCG}_{t+1} \cdot 0.018,$$

where

τ^d_{t+1} is the average marginal federal plus state dividend tax,

τ^{SCG}_{t+1} is the average marginal federal plus state tax on short-term capital gains,

τ^{LCG}_{t+1} is the average marginal federal plus state tax on long-term capital gains.

For the period 1980−1982 the data for the average marginal federal dividend, short-term and long-term capital gains tax rates is available from the NBER website.[9] So for the period 1980−1982 I estimated the tax yield as

$$TY_{t+1} = 1.0702 \cdot \left(\tau^d_{t+1} \cdot 0.045 + \tau^{SCG}_{t+1} \cdot 0.001 + \tau^{LCG}_{t+1} \cdot 0.018\right),$$

where

τ^d_{t+1} is the average marginal federal dividend tax,

τ^{SCG}_{t+1} is the average marginal federal tax on short-term capital gains,

τ^{LCG}_{t+1} is the average marginal federal tax on long-term capital gains.

[9] www.nber.org/~taxism/marginal-tax-rates/federal.html

For 1983−2007 the data for the average marginal federal plus state dividend, short-term and long-term capital gains tax rates is available from the NBER website.[10] So for the period 1983−2007 I estimated the tax yield as

$$TY_{t+1} = \tau^{d}_{t+1} \cdot 0.045 + \tau^{SCG}_{t+1} \cdot 0.001 + \tau^{LCG}_{t+1} \cdot 0.018,$$

where

τ^{d}_{t+1} is the average marginal federal plus state dividend tax,

τ^{SCG}_{t+1} is the average marginal federal plus state tax on short-term capital gains,

τ^{LCG}_{t+1} is the average marginal federal plus state tax on long-term capital gains.

References

DeLong, J.B., Magin, K., 2009. The U.S. Equity Return Premium: Past, Present, and Future. Journal of Economic Perspectives 23:1 (Winter), pp. 193−208.

Edelstein, R.H., Magin, K., 2012. The Equity Risk Premium Puzzle: A Resolution - The Case for Real Estate" with Robert Edelstein, The Coleman Fung Risk Management Research Center Working Paper #2012−04.

http://fungcenter.berkeley.edu/resources/documents/EdelsteinMagin201204.pdf

[10] www.nber.org/~taxism/marginal-tax-rates/plusstate.html

Fama, E.F., French, K.R., 2002. The Equity Premium. Journal of Finance, April 2002; 57(2): 637−659.

Hines, J.R., 2007. Corporate Taxation and International Competition, In Taxing Corporate Income in the 21st Century, ed. Auerbach, A.J., Hines Jr., J.R., Slemrod, J., 268−95. Cambridge, UK: Cambridge University Press.

Magin, K., 2009. Equity Risk Premium and Insecure Property Rights. The Coleman Fung Risk Management Research Center Working Paper # 2009−01.

http://fungcenter.berkeley.edu/resources/documents/Magin_200901.pdf

McGrattan, E.R., Prescott, E.C., 2001. Taxes, Regulations, and Asset Prices. Cambridge: NBER Working Paper 8623.

Mehra, R., 2003. The Equity Premium: Why Is It a Puzzle? Cambridge: NBER Working Paper 9512.

Rubinstein, M., 1976. The Valuation of Uncertain Income Streams and the Pricing of Options. The Bell Journal of Economics, Vol.7, No.2.

Sialm, C., 2006. Stochastic Taxation and Asset Pricing in Dynamic General Equilibrium. Journal of Economic Dynamics & Control 30 (2006) 511–540.

Sialm, C., 2008. Tax Changes and Asset Pricing. AFA 2008 San Diego Meetings.