ANSWERS TO STUDY QUESTIONS

Chapter 15

15.1. The term *human capital* refers to productive abilities and skills, or valuable expertise, that individuals have acquired that can be used to generate income. Some individuals possess human capital in their ability to manage or develop commercial property. For such individuals, acquisition of such property is not only an investment of their financial capital, but also a means to obtain a return on their human capital. The use of debt financing allows such individuals to purchase larger physical quantities of property than would otherwise be the case. This allows them to perform more property management or development services and thereby obtain more return on their human capital.

15.3. There are several problems with this statement. First, risk does increase with LTV, so you don't actually reduce your risk exposure. Second, the money invested in the CDs or Treasury bonds is going to earn lower return than the debt service required on a high LTV investment. Therefore, you would simply be using that return to pay the banker's spread. Finally, this doesn't take into account other factors such as the loss in liquidity, flexibility, and potential cost of financial distress.

15.5. Constraints on equity capital are probably not as widespread as is often assumed because real estate entrepreneurs are adept at setting up partnerships and corporations of various types, including limited partnerships in which the "outside" equity capital providers have very little control over property or asset management. Commingled real estate investment funds, limited partnerships, tenancy-in-common funds, and syndications of various types, in addition to both private and public REITs, are among the many types of vehicles that are widely used to funnel equity capital into commercial real estate.

15.7. The use of debt or leverage can increase both risk and return, which in turn could be used by investors to help incentivize property asset managers to be more productive and to enhance the value of the underlying asset. For example, the use of leverage can possibly turn a 1% improvement in return without debt into a 4% improvement, which may make managers more cautious about their decision making. This argument makes sense when considering REIT investors (shareholders) who would want REIT managers to be properly incentivized but this argument would be less relevant for private entrepreneurs that are directly involved in a project.

15.9. There are two fundamental sources of COFD. One is the deadweight burden of third-party costs, such as legal and administrative fees, in the event of default, foreclosure, or bankruptcy caused by the existence of the debt. The second source of COFD is the agency cost associated with conflicts of interest that can arise between the equity and debt investors at high LTV ratios. Both the third-party costs of default and foreclosure, and the agency costs, arise in an expectational or probabilistic sense ex ante, well before they might materialize in actuality. The mere possibility of their occurrence affects the present value of the debt and equity. Although such costs fall largely on debt holders ex post (when and if they ever actually occur), their ex ante impact at the time a loan is taken out falls on the equity investor, as lenders' factor in the expected COFD in the interest rates and origination fees they charge to issue debt.

15.11. This is a class discussion question with no exact answer. Two considerations that would always be negative for debt are COFD and the lack of liquidity while two

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possible considerations that would always be positive are debt-financed positive NPV opportunities and the use of debt to incentivize property managers.

15.13. The entrepreneurial investor may essentially bring operational management ability and the deal, while the national capital source or money partner may bring most of the required equity cash and a general lack of the ability or desire to manage the operation of the project.

15.15. a. No value is added by Bob's ability to borrow money to finance his real estate purchases. He has more than sufficient equity capital of his own to purchase enough properties to fully exhaust his profitable property management capacity. He could allocate $50 million to purchase 1,000,000 SF of property and still have more than half his wealth left over for other investments.

b. For every 100,000 SF of property Bob buys and holds, he can make a positive NPV of $200,000 due to his unique property management expertise. Using all of his own $10 million of capital with no borrowing, he could only buy two buildings at a price of $5 million each, totaling 200,000 SF, which would give him a positive NPV increment to his wealth of $400,000 (in terms of present investment value return on his human capital). If he could borrow up to a 60% LTV, then he could buy five buildings, which would cost $25 million in all (of which he would borrow $15 million), amounting to 500,000 SF under management, which would provide Bob with an NPV of $1 million. This is a $600,000 increment over the $400,000 NPV he could obtain without the use of debt, so the value of Bob's ability to borrow up to a 60% LTV is $600,000. If he could borrow up to a 80% LTV, then he could more than double this increment, buying 10 buildings worth $50 million ($40 million borrowed) encompassing altogether 1,000,000 SF, fully exhausting his management capacity, giving him a positive NPV from property management equal to $2,000,000. This is a $1,600,000 increment over the $400,000 NPV he could obtain without the use of debt. Therefore, the value of Bob's ability to borrow up to an 80% LTV is $1,600,000, almost three times the value to him of being able to borrow only up to a 60% LTV, given his constraints and initial endowment.

15.17.

	0	1	2	3	4	5	6	7	8	9	10
Estimated Net Cash Flow of project		6,746	9,894	10,505	11,283	11,780	12,348	12,920	13,438	14,201	14,694
Mezz Debt Interest ($15m @ 7% Pref)		1,050	1,050	1,050	1,050	1,050	1,050	1,050	1,050	1,050	1,050
Loan Disbursed	−15,000										
Fee (1%)	150										
Principal Payment							1,235	2,584	3,360	3,550	3,674
Balloon payment year 10											16,747
Net Cash Flow to Mezz Lender	−14,850	1,050	1,050	1,050	1,050	1,050	2,285	3,634	4,410	4,600	21,471

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