

# Discounted Cash Flow Model

## A New Idea?

### (Part II)

#### Discounted Cash Flow - DCF

A valuation method used to estimate the attractiveness of an investment opportunity. DCF analysis uses future free cash flow projections and discounts them to arrive at a present value, which is used to evaluate the potential for investment. Most often discounted by the weighted average cost of capital.

If the value arrived at through DCF analysis is higher than the current cost of the investment, the opportunity may be a good one.

Basic Formula:

$$DCF = \frac{CF_1}{(1+r)^1} + \frac{CF_2}{(1+r)^2} + \dots + \frac{CF_n}{(1+r)^n}$$

CF = Cash Flow

r = discount rate (WACC)

Source: Investopedia.com

This is part II of our study of Leviticus 25. In part I we studied verses 1-34 and learned that the Law prescribed that certain things be observed every 7<sup>th</sup> year (Sabbath year) and every 50<sup>th</sup> year (Jubilee). These included the forgiveness of debt, the resting of the land, and the redemption of the land. We discovered that the Lord prescribed a particular method of valuation to determine the price to be paid for land that would be redeemed every 50 years. This valuation method calculated the projected value of the income produced by the land for the years of possession. The description of this method looks strikingly similar to the Discounted Cash Flow Method of valuation taught at business schools and practiced by financial professionals. There truly is nothing new under the sun.

In part II we will continue our study of Leviticus 25 beginning with verse 35.

#### Leviticus 25:35-43

35 'Now in case a countryman of yours becomes poor and his means with regard to you falter, then you are to sustain him, like a stranger or a sojourner, that he may live with you.

36 'Do not take usurious interest from him, but revere your God, that

*Read Leviticus 25:35-43 from left panel and mark the key word **slave**.*

What instructions does the Lord give regarding the treatment of fellow countrymen?

What were they to do	What were they <b>not</b> to do

your countryman may live with you.

37 'You shall not give him your silver at interest, nor your food for gain.

38 'I am the Lord your God, who brought you out of the land of Egypt to give you the land of Canaan [and] to be your God.

39 'And if a countryman of yours becomes so poor with regard to you that he sells himself to you, you shall not subject him to a slave's service.

40 'He shall be with you as a hired man, as if he were a sojourner; he shall serve with you until the year of jubilee.

41 'He shall then go out from you, he and his sons with him, and shall go back to his family, that he may return to the property of his forefathers.

42 'For they are My servants whom I brought out from the land of Egypt; they are not to be sold [in] a slave sale.

43 'You shall not rule over him with severity, but are to revere your God.

44 'As for your male and female slaves whom you may have-- you may acquire male and female slaves from the pagan nations that are

Why does He give these instructions? (verse 38, 42)

*Leader: Let's continue on in Leviticus 25:44-55 and mark and say aloud the key word **slave**.*

List the instructions given regarding slavery, noting the difference between Hebrew slaves and pagan slaves.

Hebrew Slave	Pagan Slave

In verses 50 – 52, explain the method of valuation prescribed to determine the price of redemption of a Hebrew slave.

Work through the case study in the appendix to see how this valuation method is applied today.

around you.

45 'Then, too, [it is] out of the sons of the sojourners who live as aliens among you that you may gain acquisition, and out of their families who are with you, whom they will have produced in your land; they also may become your possession.

46 'You may even bequeath them to your sons after you, to receive as a possession; you can use them as permanent slaves. But in respect to your countrymen, the sons of Israel, you shall not rule with severity over one another.

47 'Now if the means of a stranger or of a sojourner with you becomes sufficient, and a countryman of yours becomes so poor with regard to him as to sell himself to a stranger who is sojourning with you, or to the descendants of a stranger's family,  
48 then he shall have redemption right after he has been sold. One of his brothers may redeem him,  
49 or his uncle, or his uncle's son, may redeem him, or one of his blood relatives from his family may redeem him; or if he prospers, he may redeem himself.

50 'He then with his purchaser shall

Does the Lord condone slavery?

*Leader: Have these passages read aloud and lead a discussion to answer this question.*

- Genesis 9:20-29
- Exodus 1:8-11, 3:1-10; Genesis 15:13-14
- Exodus 21:1-11, 20,21,26,27
- Deuteronomy 15:12-18
- Joshua 9:1-27
- Joshua 16:1-10
- Deuteronomy 23:15-16

calculate from the year when he sold himself to him up to the year of jubilee; and the price of his sale shall correspond to the number of years.

[It is] like the days of a hired man [that] he shall be with him.

51 'If there are still many years, he shall refund part of his purchase price in proportion to them for his own redemption;

52 and if few years remain until the year of jubilee, he shall so calculate with him. In proportion to his years he is to refund [the amount for] his redemption.

53 'Like a man hired year by year he shall be with him; he shall not rule over him with severity in your sight.

54 'Even if he is not redeemed by these [means], he shall still go out in the year of jubilee, he and his sons with him.

55 'For the sons of Israel are My servants; they are My servants whom I brought out from the land of Egypt. I am the Lord your God.

- Ephesians 6:5-9
- 1 Timothy 6:1-2
- Titus 2:9-10
- 1 Corinthians 7:20-24
- Philemon
- Colossians 3:11, Galatians 3:28
- Romans 6:16-23
- Galatians 4:21-31

Although the word slavery was used for both, what was the difference between the institution the Hebrews held in relation to the Gentiles and the institution they held in relation to fellow Hebrews?

What limits did God place on the treatment of slaves and bondservants?

*Read the supplemental material on the slavery question.*

Do you agree or disagree with his conclusions?

Does Paul condone slavery in his NT writings? Read 1 Corinthians 7:20-24 again. In terms of priority, which is Paul most concerned about – spiritual or physical emancipation?

What do you think Paul would have said about the institution of slavery in America? Can you imagine him being a slaveholder?

Isn't it baffling to realize that slavery, which hardly any Christian would defend today, was upheld by so many Christians right here in America?

*Read the supplemental material that follows the comparison of the two slave systems.*

Based on what we've had time to look at, summarize in your own words God's position on slavery.

Is the absence of a direct condemnation in the Bible an endorsement of that behavior? Do biblical commands and regulations regarding a behavior constitute an acceptance of that behavior?

Is there an application for us regarding behaviors and practices accepted by our culture that have questionable support in the Bible?

Is there an application of what we have learned about slavery in the Bible to employment relationships?

## BUSINESS PRINCIPLES DISCOVERED

- In the Old Testament, the Lord **regulated, but did not prohibit, the practice of slavery** in Israel. He also made a sharp distinction between how Hebrew slaves were to be treated by Hebrew masters (indentured servitude) and how pagan slaves were to be treated by Hebrew masters (permanent ownership).
- In the New Testament, the Lord **gave instructions, but did not prohibit the practice of slavery in the church**. He instructed Christian slaves to be outstanding slaves, especially if their master was also a Christian. He instructed Christian masters to grant justice and fairness (to be outstanding masters). He made it clear it is better to be a freedman than a slave because this man is free to be Christ's slave. But if that is not possible, do not worry about it because the slave is free in Christ.
- The Lord makes no distinction spiritually between free and slave – all equally precious to Him – so neither should we. Different roles and circumstances perhaps, but the same in God's eyes.
- The **discounted cash flow method of valuation** was introduced as a means to fairly value the service of a Hebrew slave. The Lord clearly didn't want anyone financially wronged by paying too little or too much.

## BUSINESS APPLICATION

1. Are you an outstanding employee even when the boss isn't looking? Do you do your work as if Jesus Himself were your direct supervisor? Do you work even harder if your boss or customer is a Christian?
2. Do you grant your employees justice and fairness? Do you threaten them? Do you show partiality?
3. Do you "toe the line" when it comes to biblical instruction? Do you push the limit to what the Lord expressly commands us not to do, or do you embrace the limits the Lord protectively provides?

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## Discounted Cash Flow Case Study

Instead of talking about Jacob and shekels and the Sabbath year, I want to use a business example to teach this method of valuation.

Suppose you are thinking about selling your business, or perhaps you wish to buy out a shareholder, or maybe you wish to allocate the assets of your estate which includes your business – you need to know the value of your business in each scenario. There are business appraisal professionals that value businesses in accordance with established methods, guidelines and professional standards. One of the methods they use is called the multiple period income approach, also known as the discounted future benefits method, also known as the discounted cash flow method.

This method projects the future benefits (free cash flow to shareholders) produced by the business and discounts those free cash flows to a present value number based on risk and the cost of capital. Here is an example of a completed analysis.

	2007	2008	2009	2010	2011
Revenue	\$ 2,000,000	\$ 2,120,000	\$ 2,247,200	\$ 2,382,032	\$ 2,524,954
Direct Costs	<u>\$ 1,200,000</u>	<u>\$ 1,272,000</u>	<u>\$ 1,348,320</u>	<u>\$ 1,429,219</u>	<u>\$ 1,514,972</u>
Gross Profit	800,000	848,000	898,880	952,813	1,009,982
Operating Expenses	<u>\$ 725,000</u>	<u>\$ 757,625</u>	<u>\$ 791,718</u>	<u>\$ 827,345</u>	<u>\$ 864,576</u>
Profit Before Taxes	75,000	90,375	107,162	125,467	145,406
Tax Allowance	<u>\$ 30,000</u>	<u>\$ 36,150</u>	<u>\$ 42,865</u>	<u>\$ 50,187</u>	<u>\$ 58,162</u>
Profit After Taxes	<u>45,000</u>	<u>54,225</u>	<u>64,297</u>	<u>75,280</u>	<u>87,243</u>
Cash Adjustments					
Depreciation and Amortization	20,000	20,000	20,000	20,000	20,000
Changes in Working Capital	<u>\$ (10,000)</u>	<u>\$ (12,000)</u>	<u>\$ (12,720)</u>	<u>\$ (13,483)</u>	<u>\$ (14,292)</u>
Changes in Long Term Debt	<u>\$ (12,000)</u>	<u>\$ (11,520)</u>	<u>\$ (11,011)</u>	<u>\$ (10,472)</u>	<u>\$ (9,900)</u>
<b>Total Cash Benefit to Shareholders</b>	<b><u>43,000</u></b>	<b><u>50,705</u></b>	<b><u>60,566</u></b>	<b><u>71,325</u></b>	<b><u>83,051</u></b>

Year	Forecast Cash Flow		26% Present Value Factors	=	Present Value Future Cash Flow
2007	\$ 43,000	x	0.79365	=	\$ 34,127
2008	\$ 50,705	x	0.62988	=	\$ 31,938
2009	\$ 60,566	x	0.49991	=	\$ 30,278
2010	\$ 71,325	x	0.39675	=	\$ 28,298
2011	\$ 83,051	x	0.31488	=	\$ 26,151
TV	\$ 419,210	x	0.31488	=	\$ 132,001
			<b>Total</b>	<b>=</b>	<b>\$ 282,793</b>

Supplemental Research on the question: Does God condone slavery in the Bible?  
 Source: [www.Christian-thinktank.com/qnoslave.html](http://www.Christian-thinktank.com/qnoslave.html). Glenn M. Miller

The data is **quite strong that the two systems are substantially different**, especially in the areas most troubling to modern minds--the abuse, the oppression, the future prospects of the slave.

I have summarized the data in this comparative chart, and added the detailed data for each of these issues below it:

	<i>Issue</i>	<b>Roman</b>	<b>New World</b>
1	<i>Motive</i>	Social Status	Economic Advantage
2	<i>Entry</i>	Mixed, mostly involuntary	All involuntary
3	<i>Treatment</i>	Wide variance, depending on owner	Narrow variance, depending on owner
4	<i>Living conditions</i>	Rural, mixed; domestic, good	Mostly very bad
5	<i>Legal controls on masters</i>	Medium	None
6	<i>Legal recourse of slaves</i>	Medium/high	None
7	<i>Legal agent status</i>	Medium (e.g., slaves could own slaves)	Virtually none
8	<i>Legal Exit</i>	Customary/Frequent	Virtually never
9	<i>Occupation types</i>	Very wide range	Medium range
10	<i>Social status</i>	Very wide range	Mostly very low

11	<i>Economic plight relative to poor free labor</i>	Better to much better	Same or worse
12	<i>Social advancement opportunities</i>	Excellent	Poor
13	<i>Incentives to perform</i>	More positive (e.g., economic, manumission) than negative (e.g., punishment)	Mostly negative and coercive (e.g. physical abuse)

Now, what emerges from this rather detailed study, is that most of the passages in the NT relating to slavery were not even speaking about what we could consider 'slavery' today (i.e., New World slavery). Given what 'slavery' was like in Paul's day, we should not be morally 'surprised' at the absence of a blanket manumission statement by him, or at the absence of a major Empire-wide anti-slavery campaign on the part of the emerging church. The data that we DO have in the NT lays clear groundwork for refuting New World Slavery (almost all of which was based on slave-trading and piracy--explicitly condemned by Paul and fought by the early church). By the time slavery loses its ethically ambiguous character as an institution (i.e., in the slave trade of the New World period), it cannot legitimately 'use Paul' to defend itself, for it had mutated into something quite unlike either Hebrew "slavery" in the OT, or "household slavery" in the NT.

So, it is incorrect to say that the bible "condones slavery" (in the modern connotation of that phrase).

Glenn M. Miller  
December 30, 1999

**Supplemental Material:  
Great Christians and their views on the institution of slavery**

Matthew Henry (1602-1714)

He writes in his commentary on Leviticus 25, "Thus, in our English plantations the negroes-only are used as slaves, how much to the credit of Christianity I shall not say."

Jonathan Edwards (1703-1758)

He owned slaves. The only writing on the subject that can be found is a letter defending a fellow pastor who was being criticized for owning slaves. He did, however, condemn slave trading.

John Wesley (1703-1791)

He writes in his commentary on Exodus 21:20, "This servant must not be an Israelite, but a Gentile slave, as negroes to our plantations ... ."

George Whitefield (1714-1770)

He showed a special concern for the plight of slaves in America in his preaching, but a nagging fear of insurrection gripped him. He rode the fence. He wrote a paper that was essentially a theological apology for slavery that also emphasized the necessity of Christian evangelism among the blacks. He wanted to establish schools for blacks, but also campaigned for the legalization of slavery in Georgia. His critics claimed this was due to economic pressures threatening his plans for an orphanage in Georgia.

General Ulysses S. Grant

"If I thought this war was to abolish slavery, I would resign my commission, and offer my sword to the other side."

Grant did not free his personal slave until after the war.

(Do not know if Grant was a Christian.)

General Robert E. Lee

"There are few, I believe, in this enlightened age, who will not acknowledge that slavery as an institution is a moral and political evil."

Robert E. Lee did not own slaves and immediately began freeing the slaves he inherited from his father-in-law.

Union Generals

Many Union generals owned slaves, and some did not free their slaves until the ratification of the 14<sup>th</sup> Amendment in 1868.

Even after Lincoln's Emancipation Proclamation, captured Southern slaves were forced to work on plantations as forced labor for the United States Army rather than being set free.

General Thomas "Stonewall" Jackson

Jackson neither apologized nor spoke in favor of the practice of slavery. He probably opposed the institution. Yet in his mind the Creator had sanctioned slavery, and man had no moral right to challenge its existence. The good Christian slaveholder was one who treated his servants fairly and humanely at all times.

Jackson's pastor said, "His servants revered and loved him as they would have done a brother or father."

President Abraham Lincoln

In his inaugural address of March 4, 1861, President Lincoln stated, "I have no purpose, directly or indirectly, to interfere with the institution of slavery in the States where it exists. I believe I have no lawful right to do so, and I have no inclination to do so."

Speaking to a group of Black leaders during the War:

"There is an unwillingness on the part of our people [Northern Whites] to live with you free colored people. Whether this is right or wrong, I am not prepared to discuss, but it is a fact with which we must deal. Therefore I think it is best for us to separate."

President Jefferson Davis

President Davis adopted an eight year old free black orphan. After his mother died, the boy was placed with a free black family as foster parents. However, this family badly mistreated him to such a degree that the news reached the ears of the President and Mrs. Davis, who, in the middle of the War, took the time and effort to intercede and rescue the little boy and welcomed him into the family. Davis himself went to court in Richmond and had free papers registered for the boy so we would always be free.

## Prayer Requests

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