

Discounted Cash Flow Model

A New Idea?

(Part I)

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 a method of valuation taught in business schools and routinely used by financial management professionals. Have you ever wondered how men come up with such things?

Solomon observed in Ecclesiastes 1:9 *"That which has been is that which will be, and that which has been done is that which will be done. So there is nothing new under the sun."*

Would it surprise you to learn that there is nothing new under the sun when it comes to determining the value of real property, businesses, and investments? Would it surprise you to learn that the Discounted Cash Flow method is the very method prescribed by God in the book of Leviticus to value land? It certainly surprised me, and excited me to see this example of how timeless and practical the Word of God really is to our professional lives.

I hope and pray that this study will not only instruct you, but will excite you as well, and give new vigor to your study and search of the Scriptures for practical answers to the issues of life.

Leviticus 25

25:1 The Lord then spoke to Moses at Mount Sinai, saying,

2 "Speak to the sons of Israel, and say to them, 'When you come into the land which I shall give you, then the land shall have a sabbath to the Lord.

3 'Six years you shall sow your field, and six years you shall prune your vineyard and gather in its crop,

4 but during the seventh year the land shall have a sabbath rest, a sabbath to the Lord; you shall not sow your field nor prune your vineyard.

5 'Your harvest's aftergrowth you shall not reap, and your grapes of untrimmed vines you shall not gather; the land shall have a sabbatical year.

6 'And all of you shall have the sabbath [products] of the land for food; yourself, and your male and female slaves, and your hired man and your foreign resident, those who live as aliens with you.

7 'Even your cattle and the animals that are in your land shall have all its crops to eat.

8 'You are also to count off seven

The 25th chapter of Leviticus contains this teaching on valuation. The first step is always to understand the **context** of a passage in order to properly interpret the instruction contained in that passage. **Context always rules interpretation.**

The context of Leviticus (literally means "relating to the Levites") concerns laws and regulations for worship including instruction on ceremonial law, moral law, holy days, the Sabbath year, and the year of Jubilee. The theme is holiness – what God expects from those who have been redeemed (that includes us too!). The new testament teaches in Hebrews and other places that Christ has fulfilled the Law and invited us into a new covenant of grace and personal relationship, thus the ceremonial law and sacrificial system is no longer necessary, therefore no longer a requirement. However, does that mean the entire book of Leviticus is irrelevant to us? No, of course not – **all** Scripture is inspired by God and **useful** for teaching, reproof, correction and training in righteousness. (2 Timothy 3:16). Certainly, the moral law is applicable. Moreover, as we are going to see, this book includes other nuggets as well for the diligent student of God's Word.

OBSERVE / DISCUSS

We are going to take several passes through this chapter, each time focusing on different key words and principles. The first pass focuses on **the land** and **property**.

*Leader: Read Leviticus 25 and mark and say aloud **land** and **property**.*

Now go back and answer these questions about the land:

- Who gave Israel this land?
- What must the people do to live securely in the land?
- What does God say about selling the land?
- Note any other observations you made about land and property.

sabbaths of years for yourself, seven times seven years, so that you have the time of the seven sabbaths of years, [namely,] forty-nine years.

9 'You shall then sound a ram's horn abroad on the tenth day of the seventh month; on the day of atonement you shall sound a horn all through your land.

10 'You shall thus consecrate the fiftieth year and proclaim a release through the land to all its inhabitants. It shall be a jubilee for you, and each of you shall return to his own property, and each of you shall return to his family.

11 'You shall have the fiftieth year as a jubilee; you shall not sow, nor reap its aftergrowth, nor gather in [from] its untrimmed vines.

12 'For it is a jubilee; it shall be holy to you. You shall eat its crops out of the field.

13 'On this year of jubilee each of you shall return to his own property.

14 'If you make a sale, moreover, to your friend, or buy from your friend's hand, you shall not wrong one another.

15 'Corresponding to the number of years after the jubilee, you shall buy from your friend; he is to sell to you

Why is the land so important? Read Genesis 12:1-3; 13:14-17; 15:1-7; 17:1-10 from your Bible. God made an unconditional covenant (an unconditional promise and unlike man, the Lord always keeps His Word) with Abram (God later changed to Abraham) known as the Abrahamic covenant – which is the first of the three salvation covenants to bring sinners to faith in Jesus Christ. (The other two covenants relating to salvation are the covenant of the law that exposes sin, and the new covenant of grace that redeems from sin.)

List the provisions of this covenant from this passage – what does Abraham have to do, and what does the Lord promise to do.

Abraham	Lord

Read Genesis 3:14-16, Galatians 3:1-16, and Romans 4 from your Bible. What did Abram **believe** in Genesis 15:6 that the Lord reckoned to him as **righteousness**?

In modern Christian terms, how was Abram saved? (Hebrews 11:8-19, Ephesians 2:8-9)

Therefore, the first provision of the Abrahamic covenant was the Provision of the Seed – Jesus Christ, the Messiah – Who would come through Abram's physical descendants. The second key provision was a people, a **nation** that would later be known as Israel. The third provision was the **land**, a physical possession for the nation in the middle east. Has the Lord fulfilled His covenant?

Despite desperate, persistent and wicked attempts by Satan to stop the Lord from fulfilling His covenant, he has not succeeded. (1) Multiple attempts to destroy the ancient Jewish people so the Messiah would not be born – all thwarted, (2) Herod's attempted murder of the child Jesus – thwarted, (3) Jesus' murder on the cross - thwarted by the resurrection, (4) the removal of the Jewish people from the land and their scattering among the nations – certainly the end of the nation Israel as they would undoubtedly mingle with the

according to the number of years of crops.

16 'In proportion to the extent of the years you shall increase its price, and in proportion to the fewness of the years, you shall diminish its price; for [it is] a number of crops he is selling to you.

17 'So you shall not wrong one another, but you shall fear your God; for I am the Lord your God.

18 'You shall thus observe My statutes, and keep My judgments, so as to carry them out, that you may live securely on the land.

19 'Then the land will yield its produce, so that you can eat your fill and live securely on it.

20 'But if you say, "What are we going to eat on the seventh year if we do not sow or gather in our crops?"

21 then I will so order My blessing for you in the sixth year that it will bring forth the crop for three years.

22 'When you are sowing the eighth year, you can still eat old things from the crop, eating [the old] until the ninth year when its crop comes in.

23 'The land, moreover, shall not be sold permanently, for the land is Mine; for you are [but] aliens and

gentiles and lose their cultural identity – thwarted by their insistence on their odd ways and practices which led to persecution that caused them not to be absorbed into the gentile cultures (ironic isn't it that persecution preserved the people as a people), (5) the attempts to crush the re-constituted nation of Israel by overwhelming hordes of Arab armies – thwarted militarily in a manner reminiscent of Israel's miracle victories in ancient times, and (6) current attempts to take more and more land away from Israel at the negotiating table – do you think the Lord will not thwart this as well?

The physical land – the promised land - was important and is important as a fulfillment of the Abrahamic covenant. As far as I can tell from the Scriptures, the Lord never changed His mind on this. It is interesting to note that every world power throughout history that was used by Satan to thwart God's fulfillment of any of his covenant promises is no longer a world power. Can you think of examples?

Could this explain God's longsuffering patience with a morally corrupt and increasingly pagan United States that has consistently stood by Israel? Does our current position of pressuring Israel to concede even more of the land that God deeded to Israel bode well for us?

Leader: Walk the group through the maps and the article at the end of the study.

Leader: Ask someone to read Nehemiah 2:17-20 from their Bible.

What did Nehemiah think of the non-Jewish claims on Jerusalem?

Let us recap and return to our study of Leviticus 25.

Now we understand the significance of the land and the property – it relates to the Lord's covenant promise. Not only does the Lord insist that the land belongs to the Jewish people (does anyone doubt that the ancient boundaries will be restored eventually – perhaps in the millennial kingdom?), but that it remains in the proper families and tribes, also relating to the ancient deeds.

sojourners with Me.

24 'Thus for every piece of your property, you are to provide for the redemption of the land.

25 'If a fellow countryman of yours becomes so poor he has to sell part of his property, then his nearest kinsman is to come and buy back what his relative has sold.

26 'Or in case a man has no kinsman, but so recovers his means as to find sufficient for its redemption,

27 then he shall calculate the years since its sale and refund the balance to the man to whom he sold it, and so return to his property.

28 'But if he has not found sufficient means to get it back for himself, then what he has sold shall remain in the hands of its purchaser until the year of jubilee; but at the jubilee it shall revert, that he may return to his property.

29 'Likewise, if a man sells a dwelling house in a walled city, then his redemption right remains valid until a full year from its sale; his right of redemption lasts a full year.

30 'But if it is not bought back for him within the space of a full year, then the house that is in the walled

OBSERVE / DISCUSS

On our second pass through Leviticus 25, we are going to focus on the sabbatical year.

*Leader: Read verses 1-9, 20-22 and ask the group to mark and say aloud **Sabbath, sabbatical and seventh.***

The Hebrew word translated Sabbath literally means to cease, to rest. It's most frequent mention in the Bible describes the day given as a gift to God's people, a day to be kept holy, set apart to the Lord, and first observed by the Creator Himself on the seventh day of creation. Describe what Sabbath means in this Leviticus context. Look at what you marked in verses 1-9, 20-22 and list what you observe.

Leader: Have someone read from his Bible Exodus 21:1-6.

This passage is part of a lengthy section of instruction that begins with the Ten Commandments in chapter 20. The Lord then provides details on how to live out the ten commandments in seemingly every possible situation, and in great detail, through the end of chapter 23.

What do we learn in this passage about the Sabbath year?

city passes permanently to its purchaser throughout his generations; it does not revert in the jubilee.

31 'The houses of the villages, however, which have no surrounding wall shall be considered as open fields; they have redemption rights and revert in the jubilee.

32 'As for cities of the Levites, the Levites have a permanent right of redemption for the houses of the cities which are their possession.

33 'What, therefore, belongs to the Levites may be redeemed and a house sale in the city of this possession reverts in the jubilee, for the houses of the cities of the Levites are their possession among the sons of Israel.

34 'But pasture fields of their cities shall not be sold, for that is their perpetual possession.

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 your countryman may live with you.

Leader: Have someone read from his Bible Exodus 23: 9-12.

What do we learn in this passage about the Sabbath year?

Leader: Have someone read from his Bible Deuteronomy 15:1-18.

What else was supposed to happen every seven years?

Leader: Have someone read from his Bible 2 Chronicles 36:11-23.

Had the nation been observing the Sabbath years as prescribed by God?

What was the consequence of this disobedience?

What do we learn about the sovereignty of God and the free will of man in this passage?

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 around you.

45 'Then, too, [it is] out of the sons

Leader: Have someone read from his Bible Daniel 9:1-27.

Wow, we could spend several weeks on this passage alone and barely scratch the surface! Relate this passage to 2 Chronicles 36 and our study of the land's sabbatical year. Record your insights.

Let us summarize in this chart what we have discovered from God's Word about the Sabbath year.

Observation	Theological Significance	Social Significance
Leviticus 25		
Exodus 21		
Exodus 23		

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

Deuteronomy 15		
2 Chronicles 36		
Daniel 9		

OBSERVE / DISCUSS

Do you know what this is?



On our third pass through Leviticus 25, we are going to focus on the year of jubilee and the redemption that was to take place. The Hebrew word translated **jubilee** literally means ram's horn, the trumpet used to bring forth the people. **Redeem** means emancipation, rescue, restore.

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.

Let's look in this chapter for the additional provisions in the Sabbath of Sabbaths – the 50th year of jubilee.

*Leader: Read verses 8-55 and ask the group to mark and say aloud **jubilee** and all forms of **redeem**.*

In verses 8-13 what were the people supposed to do in the year of jubilee?

What is the dilemma for the Jewish businessman who owns or wishes to purchase property that is part of another family's ancestral inheritance from the Lord?

What are the Lord's instructions in verses 14-17 on how to deal with this dilemma?

Leader: Work the case study in the appendix.

OBSERVE / DISCUSS

Leader: Let's continue to work our way through Leviticus 25, picking it up in verse 18. Read aloud verses 18-22 and explain the Lord's answer to the question of what they will eat during the sabbatical year.

Is there a principle here for us as well? (2 Corinthians 9:6-11; Philippians 4:19)

Read verses 23-28 and explain what was supposed to happen when a Jew was unable to redeem his property? Was he supposed to just wait for the jubilee?

We see this concept of the **kinsman-redeemer** beautifully illustrated in the book of Ruth. Read Ruth 4:1-22 and also Matthew 1:1-5 and explain the concept.

You may have heard Jesus referred to as our Kinsman-Redeemer? Is this a biblical concept? Read Galatians 4:1-7 and Luke 4:14-21 for the answer.

Leader: Let's continue on in Leviticus 25:29-34.

What distinction does the Lord make between buildings and the land? Why do you think He made this distinction?

Summarize in this chart what we have discovered from God's Word about the year of Jubilee.

Observation	Theological Significance	Social Significance

Did the Jews ever observe the year of the year of Jubilee? Read Jeremiah 34.

Why don't the Jews observe Sabbath years and the year of Jubilee today? I did some research of contemporary Jewish teaching sites and found this sample of thoughts on the question.

Christian scholars tend to downplay both the Sabbath and the jubilee as never really having been practiced. For the jubilee, it's probably rarely been practiced. But for the sabbatical year, there's lots of evidence. The Romans reported that they couldn't collect taxes in the seventh year, the sabbatical year, because the Jews wouldn't work!

The observance of the Sabbatical and Jubilee years were specifically tied to the land of Israel. Once the majority of Jews no longer lived in the land these observances were no longer maintained.

When Jews started to establish agricultural communities in Israel in the late 19th and early 20th centuries, the observance of the Sabbatical year became a critical issue. If the Jews observed these laws, allowing their land to remain fallow for a whole year, it might spell financial ruin to struggling settlements. Some rabbis, such as Rabbi Isaac Elhanan Spector of Kovno and Rabbi Avraham Isaac Kook, suggested that Jews sell their land to gentiles for the year as a way of circumventing disaster. Since the land would not technically be owned by Jews, it would not be subject to the laws of the Sabbatical year.

Before we get too critical of these explanations why Jews in Israel no longer observe these commands and regulations, how is the Christian church doing with these particular New Testament commands?

- Matthew 5:21-25
- Matthew 5:27-32
- Matthew 5:33-37
- Matthew 5:38-42
- Matthew 5:43-47
- Matthew 18:15-17

Thank goodness our salvation does not rest on obedience. By the way, neither did the Jews' salvation rest on the keeping of statutes

and ordinances. Read Psalm 51:17, Isaiah 57:15.

That's it for part I of the study of Leviticus 25! I hope and pray you learned a practical business skill regarding valuation, but I also hope and pray you have learned something about the Old Testament and how to study, interpret and apply the full counsel of God's Word in practical ways today.

BUSINESS PRINCIPLES DISCOVERED

- **God is a covenant-keeping God.**
- **God has a special covenant relationship with Israel.** Jesus said that no one comes to the Father except through Him. The hope of salvation for all people rests on Jesus, including the Jews. That is very clear from Paul's writings and passion to evangelize the Jewish people. However, that does not negate God's covenant relationship with the nation of Israel. We can have that same confidence in all of God's promises.
- The **Old Testament is still relevant to New Covenant believers** both in terms of theological significance and also social significance.
- The laws regarding the Sabbath years and the year of Jubilee reveal these **principles for living that are applicable today:**
 - God's formula of rest / work (1 out of 7) is a model for our physical, emotional and spiritual well-being.
 - God will always provide where He guides, including rest when you think you need to work.
 - The laws address environmental concerns that overuse of the land will make it unusable.
 - The Jubilee and Sabbatical years provided a form of regular debt release to stabilize social and economic gaps that naturally develop in society. Because of drought and other cyclical crop failures, the poor needed to be allowed to start over and not languish in poverty.
 - The treatment of the economically disadvantaged was strictly regulated.
 - Long-term debt was discouraged.
 - The concept of the capital lease was introduced as an alternative to an outright sale, including the pricing formula.
- The **discounted cash flow method of valuation** was introduced as a means to fairly value property based on its income-producing potential. The Lord clearly didn't want anyone financially wronged by paying too little or too much.

BUSINESS APPLICATION

1. How can you apply these principles to your business?
 - Are you resting at least one day a week? Are you resting your people and resources?
 - Is there anyone in financial bondage to your business? How do you treat them? Do you force them into bankruptcy?
 - Is your business financed with long term debt?
 - Has the Lord given you stewardship over property, over resources, over opportunities, which you are not to permanently use for other purposes?
 - When you purchase business property, do you offer a fair price or do you "wrong" the other party?

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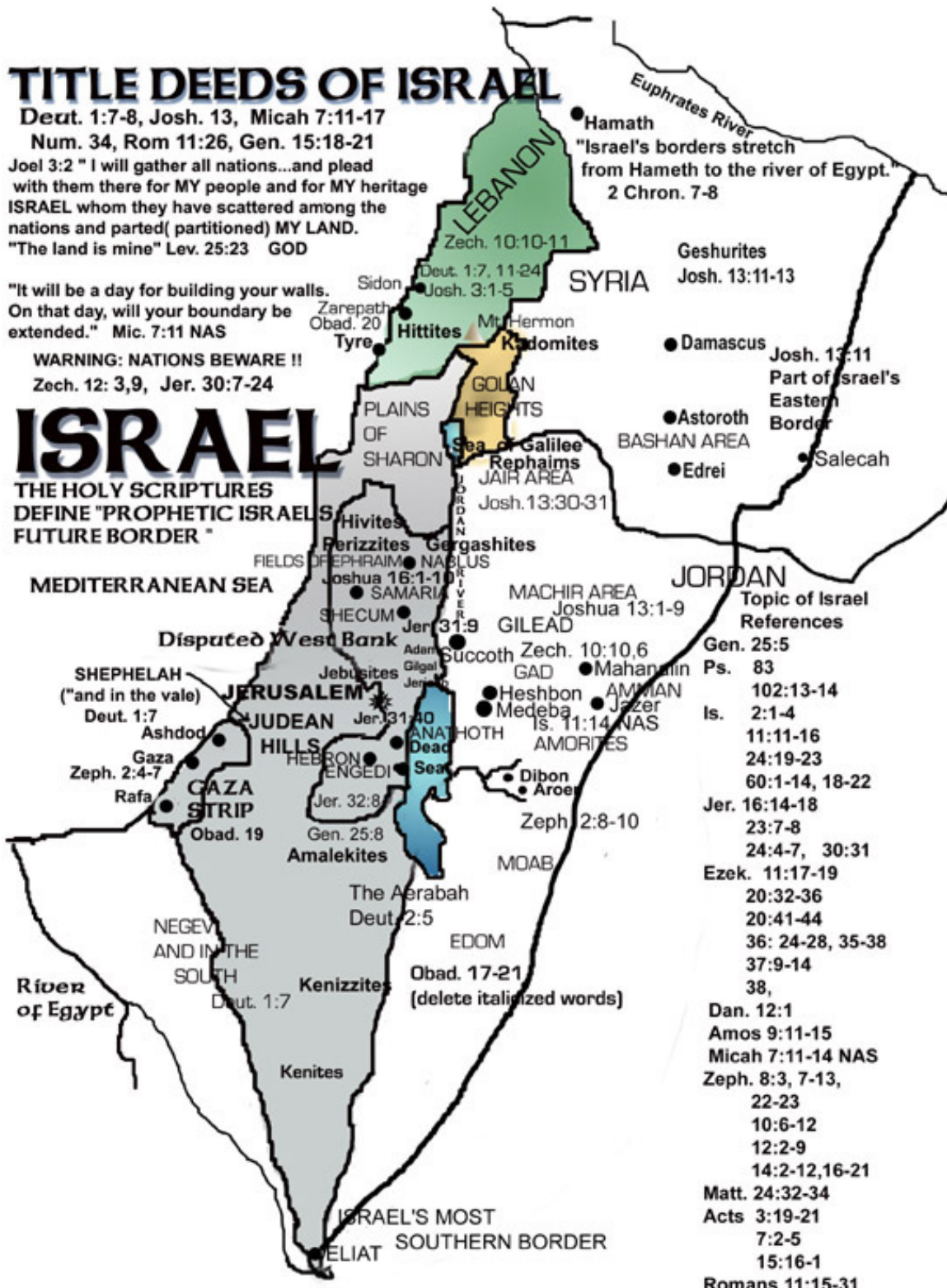
TITLE DEEDS OF ISRAEL

Deut. 1:7-8, Josh. 13, Micah 7:11-17
 Num. 34, Rom 11:26, Gen. 15:18-21
 Joel 3:2 " I will gather all nations...and plead with them there for MY people and for MY heritage ISRAEL whom they have scattered among the nations and parted(partitioned) MY LAND.
 "The land is mine" Lev. 25:23 GOD

"It will be a day for building your walls. On that day, will your boundary be extended." Mic. 7:11 NAS
WARNING: NATIONS BEWARE !!
 Zech. 12: 3,9, Jer. 30:7-24

ISRAEL

THE HOLY SCRIPTURES DEFINE "PROPHETIC ISRAEL'S FUTURE BORDER "







The Jews took no one's land

By Joseph Farrah

WorldNet Daily - November 19, 2002

As the most visible Arab-American critic of Yasser Arafat and the phony "Palestinian" agenda, I get a lot of hate mail. I've even received more than my share of death threats. Most of those who attack me – at least those who bother to get beyond the four-letter words and insults – say I just don't understand or have sympathy for these poor Arabs who were displaced, chased out of their homes and turned into refugees by the Israelis.

Let me state this plainly and clearly: **The Jews in Israel took no one's land.**

When Mark Twain visited the Holy Land in the 19th century, he was greatly disappointed. He didn't see any people. He referred to it as a **vast wasteland**. The land we now know as Israel was practically deserted. By the beginning of the 20th century, that began to change. **Jews from all over the world began to return to their ancestral homeland – the Promised Land Moses and Joshua had conquered millennia earlier, Christians and Jews believe, on the direct orders of God. That's not to say there wasn't always a strong Jewish presence in the land – particularly in and around Jerusalem. In 1854, according to a report in the New York Tribune, Jews constituted two-thirds of the population of that holy city.** The source for that statistic? A journalist on assignment in the Middle East that year for the Tribune. His name was Karl Marx. Yes, that Karl Marx.

A travel guide to Palestine and Syria, published in 1906 by Karl Baedeker, illustrates the fact that, even when the Islamic Ottoman Empire ruled the region, the Muslim population in Jerusalem was minimal. The book estimates the total population of the city at 60,000, of whom 7,000 were Muslims, 13,000 were Christians and 40,000 were Jews. "The number of Jews has greatly risen in the last few decades, in spite of the fact that they are forbidden to immigrate or to possess landed property," the book states. Even though the Jews were persecuted, still they came to Jerusalem and represented the overwhelming majority of the population as early as 1906. **And even though Muslims today claim Jerusalem as the third holiest site in Islam, when the city was under Islamic rule, they had little interest in it.**

As the Jews came, drained the swamps and made the deserts bloom,

something interesting began to happen. Arabs followed. I don't blame them. They had good reason to come. They came for jobs. They came for prosperity. They came for freedom. And they came in large numbers.

Winston Churchill observed in 1939: "So far from being persecuted, the Arabs have crowded into the country and multiplied till their population has increased more than even all world Jewry could lift up the Jewish population." Then came 1948 and the great partition. **The United Nations proposed the creation of two states in the region – one Jewish, one Arab. The Jews accepted it gratefully. The Arabs rejected it with a vengeance and declared war.**

Arab leaders urged Arabs to leave the area so they would not be caught in the crossfire. They could return to their homes, they were told, after Israel was crushed and the Jews destroyed. It didn't work out that way. By most counts, several hundred thousand Arabs were displaced by this war – not by Israeli aggression, not by some Jewish real-estate grab, not by Israeli expansionism. In fact, there are many historical records showing the Jews urged the Arabs to stay and live with them in peace. But, tragically, they chose to leave.

Fifty-four years later, the sons and daughters and grandsons and granddaughters of those refugees are all-too-often **still living in refugee camps – not because of Israeli intransigence, but because they are misused as a political tool of the Arab powers. Those poor unfortunates could be settled in a week by the rich Arab oil states that control 99.9 percent of the Middle East landmass,** but they are kept as virtual prisoners, filled with misplaced hatred for Jews and armed as suicide martyrs by the Arab power brokers.

This is the modern real history of the Arab-Israeli conflict. At no time did the Jews uproot Arab families from their homes. When there were title deeds to be purchased, they bought them at inflated prices. When there were not, they worked the land so they could have a place to live without the persecution they faced throughout the world.

It's a great big lie that the Israelis displaced anyone – one of a series of lies and myths that have the world on the verge of committing yet another great injustice to the Jews.

Highlights added by Rick Freed.

Discounted Cash Flow Case Study

Jacob is a commercial farmer and wishes to purchase 100 acres of prime farmland from Caleb to sow and reap corn which is his main cash crop. He estimates he can produce 150 bushels of corn per acre per year, and the market price for corn is 3 silver shekels per bushel. The next jubilee year is in 30 years. What is the value of this land according to Leviticus 25?

Solution: “Corresponding to the number of years after the jubilee, you shall buy from your friend; he is to sell to you according to the number of years of crops.” (Lev 25:15)

$100 \text{ acres} * 150 \text{ bushels/acre} * 3 \text{ shekels/bushel} * 30 \text{ years} = 1,350,000 \text{ shekels.}$
(45,000 shekels cash flow per year)

That is an arkful of shekels! Jacob has an idea – since he knows that Caleb is not a farmer, he figures he can offer Caleb 1,000,000 shekels (111 bushels/acre). Jacob gleefully crunches the numbers on his pocket abacus and is quite pleased with his 35% ROI, boasting about it back in the Sanhedrin (Proverbs 20:14).

According to Leviticus 25:17, how does the Lord feel about Jacob’s smart business transaction?

Would it make a difference if Caleb were also a farmer and was currently producing 111 bushels per acre, and Jacob projected an increase in the yield to 150 bushels per acre based on his plans to irrigate and rotate the fields?

Does it make a difference that Jacob has to borrow the 1 million shekels at a cost of 10% per year and he needs to invest 50,000 shekels upfront on the irrigation project? Is his return on investment really a **plus 350,000** shekels? If we crunch the numbers using the formula on the first page of the study, we discover that the discounted present value of the annual crops using a 10% discount rate is a **negative 583,000** shekels when you take the regularly scheduled Sabbath years of no return into account. How can that be?

Jacob further analyzes the investment using the DCF method and discovers that his breakeven point for the 1 million is a cost of capital of 2%. But since his banker Judas will only provide the investment capital at 10%, and he assesses the risk of farming – never know when the nation’s sin will bring on another drought or horde of locusts, Jacob adds another 5% to the discount rate and uses the model again to calculate that he breaks even over 30 years if pays only 290,000 shekels at 15% cost of capital, which means he has to offer less than that in order to realize a ROI after paying Judas. How do you think Caleb will feel about an offer under 290,000? Does it matter to him what Jacob’s cost of capital is ... should it? Who makes out the best in this business transaction – Jacob, Caleb or Judas? [Read Deuteronomy 15:6 and relate to this case study and the old adage “It takes money to make money.”]

What price *does not wrong either man* (Lev 25:17)?

Recap of the Case Study Scenarios

Scenario Description	Investment (shekels)	Discount rate	Net Present Value
Jacob's projected cash flow @150 bpa	0	0	1,350,000
Caleb's projected cash flow @111 bpa	0	0	999,000
Value to Jacob incl price and CAPEX of 50,000	1,050,000	10%	(583,000)
Value to Jacob adding risk factor	1,050,000	15%	(660,000)
Breakeven scenario for Jacob	290,000	15%	0
100,000 ROI for Jacob @price of 125k + 50k CAPEX	175,000	15%	100,000
Ooops ... only 25 years until jubilee			
95,000 ROI for Jacob @price of 125k + 50k CAPEX	175,000	15%	95,000

Discount Rate

This case study illustrates how sensitive the DCF analysis is to the discount rate.

What is the discount rate? The discount rate is the rate by which benefits that accrue in some future time period must be adjusted so that they can be compared with values in the present.

Typically, the discount rate is arrived at by beginning with the appropriate interest rate for the length of time in question, then adding an additional sum to account for risk. For example, some companies add 15% to term-specific risk-free rates.

Businessmen evaluate the decision to invest based on the opportunity costs of one choice versus the other, and other considerations about future needs. For example, offered a choice between getting a \$100 today and \$100 one year from today, most people would choose the \$100 today. However, if the amount offered in the future was greater than \$100, say \$110, many would forgo the \$100 in favor of the future amount. By doing so, their rate of time preference is revealed to be at most 10 percent per annum. To undertake an investment, the expected return on investment must cover all costs, including the rate of interest.

Large corporations use their Weighted Average Cost of Capital (WACC) as their discount rate which is essentially their cost of funds for investments – a weighted average of their borrowing rate (debt) and their cost of equity based. All capital sources - common stock, preferred stock, bonds and any other long-term debt - are included in a WACC calculation.

The discount rate is also known as the hurdle rate – usually the WACC + corporate rate of return – which means all investments must show at least this overall return to be considered.

Another variation is simply to refer to the discount rate as the time value of money which includes the inflation or deflation rate as well as the other variables. Generally speaking, a dollar will be worth less in buying power a year from now than today.

There are no clear-cut rules as to what an appropriate discount rate should be in a given case since each investor has a different cost of capital, different financial objectives, different assessments of risk. There are industry benchmarks as a start point.

“Multiples”

Another widely used method of valuation is to apply a “multiple” to the most recent year’s annual revenue or earnings to determine value. Most businesses sell for multiples of 2-3x earnings – it varies by type of business.

The first question: Do we apply the multiple to Caleb’s “financials” or Jacob’s projections?

Calculation:

33,300 shekels/year (100 acres * 111 bushels/acre * 3 shekels/bushel) * 2.0 = 66,600 shekels
33,300 shekels/year (100 acres * 111 bushels/acre * 3 shekels/bushel) * 3.0 = 99,900 shekels

Does this method affirm or contradict Jacob’s discounted cash flow method?

Practical Principles

For most of us, this discounted cash flow lesson is way more information than we can absorb, let alone use in our businesses. What are the key takeaways from this principle in Leviticus 25 and the modern discounted cash flow analytical technique?

- The Lord did not want anyone to benefit unfairly due to His requirements for the jubilee. Is it going too far to say the Lord desires business transactions that are fair to both parties? Is it going too far to say that a Christian businessman should be willing to pay what something is worth versus what he is able to get it for?
- One method of determining the value of any asset is to project the income that asset will produce over time for the investor based on what it has historically produced and what the investor believes it will produce.
- The value of an asset is different for the buyer and the seller because they have different assumptions about what it can produce, different discount rates, different assessments of risk, different time horizons.
- The discounted cash flow method is extremely sensitive to the discount rate, and is relatively insensitive to cash flow assumptions far in the future.
- It is wise to use a variety of methods – other methods such as industry “multiples” and comparative analysis (what have other like businesses sold for recently making adjustments for differences.)
- Valuation is both an art and a science.

Prayer Requests

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