

Toward a Biblical Theology of Efficiency

Michael E. Cafferky

Southern Adventist University

ABSTRACT: This paper examines operational efficiency from a biblical theology perspective. The paper describes operational efficiency in contemporary terms and considers six categories of constraints on efficiency. In pursuing its purpose, the paper reviews six relevant biblical themes including: God's character, creation, covenant, shalom, blessing, and fruitfulness. Five biblical instrumental values and virtues describe how efficiency is to be achieved: truth, wisdom, prudence, usefulness, and stewardship. The biblical theme of agricultural yield provides an illustration of the instrumental virtues and values by which workers achieve and measure efficiency.

Key Words: Agricultural yield, covenant, efficiency, fruitfulness, harvest, *Imitatio dei*, productivity, Sabbath, shalom, shrewdness, stewardship, technology, theology, usefulness, utility, wisdom.

INTRODUCTION

Being responsible for operational efficiency has become a central element in the definition of what it means to be a manager (Robbins & Coulter, 2009; Daft, 2008). The drive for higher productivity and reduced waste are normal preoccupations of all human work, regardless of one's religious beliefs (McKee, 1993). Efficiency is one of the widely accepted legacies of the Scientific Management Movement of the late 19th and early 20th centuries (Freeman, 1996; Bedeian & Wren, 2001). Some claim that efficiency has contributed to raising the standard of living (Richards, 2002, p. 44; Drucker, 1954, p. 41). Others suggest that it is efficiency that has been the primary source of wealth creation during the last 100 years because of its influence on generating cash flow from operations. Bannock, Baxter, and Davis (2003) claim that the efficient engine of productivity is the main cause of increases in *per capita* income (pp. 311-312). Improvements in productivity have made possible the growth of capital for investment in new business ventures (Griffiths, 1984, p. 23-24). From another perspective, efficiency has become the backbone of managerial ability to live up to the trust that business owners, employees, and customers (in the for-profit sector) and constituents (in the nonprofit sector) place in managers who are serving as their agents.

Efficiency has been the focus of study at the level of the individual employee up to the level of the national economy in a wide variety of industries, domestic and

international firms, various business functions, and in companies that offer services as well as products. For just two widely diverging examples, consider that efficiency has been the focus of study of Taiwanese hospitals (Shih-Neng, 2006) and European railway systems (Couto & Graham, 2009). The economic literature on efficiency is extensive, including such widely divergent industries as United States air travel, Internet advertising, accounting services, automobile assembly plants in Turkey, hotels in Portugal, higher education, construction industry in China, gambling, banking services in India, electricity distribution in Poland, government agencies, timber harvesting, professional football (soccer) teams in the English Premier League, manufacturing firms in sub-Saharan Africa, grocery retailing in France, and the stock market.

Consumers are interested in efficiency, too. Wanting to pay the best price for the best fruits and vegetables at the grocery store is an expression of the desire for efficiency all along the chain of value from the farmer's field to the dinner plate.

But not everyone is enamored with the concept. Stapleford (2002) represents many who believe that economic efficiency does not ensure social justice. Like any other cultural experience, productivity can lead to idolatry (Sider, 2005, p. 102). Some Christians believe that economics has become essentially a religion. In their minds the "gospel of efficiency" has replaced the gospel of Christ (Nelson, 2005, p. 92-94; Nelson, 2001). Rempel (2003) argues bluntly that "we have come to worship abundance" (p. 51). In her intellectual history of the concept, Jennifer

Alexander (2008) says that critics of industrial society are concerned that efficiency is a method of control and exploitation, which is antithetical to the notion of God-created human freedom (p. 1). Rooted in what is known as the shareholder view of the firm, efficiency can be contrary to the interests of some stakeholders who are not stockholders (Clark, 2002; Koslowski, 2002).

Theologian Ellen Davis (2009) criticizes the drive to increase agricultural production aimed solely at the maximization of short-term profit (pp. 23-24). Excessive emphasis on large-scale farming has resulted in ecological damages such as depletion of water resources, desertification and soil erosion, and contamination due to the use of fertilizers and pesticides. In contrast to this “productionist ethic” (Zimdahl, 2006), or industrialism as some call it, Ellen Davis and others promote an alternative view, an agrarian ethic, where the long-term needs of the land and people as well as our spiritual relationship with the land are factored into decisions that affect productivity; however, she appears to gloss over the portions of the Bible that contribute to a balanced view of productivity. She believes there is evidence in the Bible and archeology that the leaders of Israel engaged in large-scale farming, which resulted in ecological damage. Proponents of the agrarian viewpoint cite studies supporting their belief that small-scale farms are more efficient than large-scale, industrial farms while these smaller farms promote the social and spiritual values consistent with the Bible; however, such studies have been subject to damaging critical review by other researchers (e.g., Johnston & Le Roux, 2007; Dyer, 2004).

How are we to evaluate the criticisms of efficiency referred to above? Are there just two extreme positions from which to choose when considering efficiency in the light of the Bible record? To date no comprehensive published work on the focused topic of efficiency as seen through biblical theology has appeared in print.

It is the thesis of this paper that the Bible encourages the pursuit of operational efficiency within the constraints of moral principles designed to foster abundant living in all dimensions considered important in the Bible: social, physical, spiritual, political, and economic. The purpose of this paper is to examine the concept of efficiency from a biblical theology point of view and in so doing encourage dialogue about what might constitute a balanced view.

This is not a paper on the theology of work, a topic addressed by several authors (e.g., Jensen, 2006; Hardy, 1990; Volf, 1991; Larive, 2004). Also outside the scope of this paper is the study of wealth and poverty, two subjects which have captured the attention of many Christian

authors (e.g., Schneider, 2002; Sider, 2005; Griffiths, 1984). Such authors have little to say about the topic of efficiency. A final delimitation for this paper is that it will not review the economic and political debate over the inverse relationship between farm size and efficiency held by some researchers and opposed by others.

The paper will first present an introduction to the concept of operational efficiency as typically used in contemporary business. It introduces the idea of constraints to illustrate the forces that work against efficiency. The paper will then review biblical themes and concepts relevant to Christian thinking about the topic, including creation, covenant and its related concepts of shalom and blessing, and fruitfulness. The paper will explore instrumental values relevant to achieving efficiency: truth, wisdom, prudence, usefulness, and stewardship. It discusses the topic of agricultural yield as the biblical illustration of achieving and measuring efficiency. *Imitatio dei* and our responsibility toward unproductive individuals also are reviewed.

OPERATIONAL EFFICIENCY

Efficiency, the engine of productivity, is an economic concept that considers the relationship between the value of desired ends and the value of useful means (Heyne, 1993; Foldvary, 1998; Neal & Hesketh, 2001; Drucker, 1974). In common parlance, the term efficiency and the term productivity are considered synonyms (Lindberg, 1999).

The term dynamic efficiency, when used in the context of organizations, is the management technology concerned with the relationship between output (O) and input (I). This is often expressed in the form of a ratio ($O \div I$), which is typically applied to the term productivity (Pearce, 1992, p. 348; Kendrick, 1994, pp. 814-819). This is the concern with the prospects of producing “as large as possible an output from a given set of inputs” (Farrell, 1957, p. 254; Drucker, 1954, p. 41) or the ability to minimize inputs used for a given level of production (Yang & Chen, 2009; Heyne, 1993). This is sometimes referred to as *technical* or *operational efficiency*. Dynamic efficiency stems from the desire to create growth overcoming the natural limitations of resources by transforming resources into useful outputs thereby making *gains* in value.

In contrast, *static* efficiency is the management systems concerned with conservation, avoiding waste, creating reliability when it is lacking, and reducing or eliminating costly variation when it is present. Static effi-

ciency comes from concerns about managing the risks of resource loss (Alexander, 2008, p. 52).

These two types of efficiency are interdependent. Creating reliability and reducing variation save resources and create opportunities for growth. The most commonly used, though not perfect, indicator of value is a monetary measure, and the most obvious measure of a company's efficient use of inputs is its costs (Farrell, 1957). See Table 1.

Table 1: Dynamic and Static Efficiency

Dynamic Efficiency	Static Efficiency
Creating growth through transforming inputs into outputs; attempting to achieve gains in productivity	Conservation, avoiding waste, creating reliability and reducing variation; prevent loss

The economic logic of efficiency can be seen in relation to a business owner's use of assets. This will provide the background for contemporary thinking on the topic.

As owners anticipate the future, they place assets (cash, inventory, property, buildings, and equipment) into the service of an organization's mission within the larger context of service to society, the products or services which society demands, and the availability of substitutes. Owners and — through the delegation of authority — their managers naturally want to know to what degree the assets are achieving their intended purpose and how efficiently such achievement is being accomplished. If an asset is unproductive or less productive than is desired in terms of cash flow, all things being equal, the owner of the asset takes responsibility by either changing how the asset is being used or by employing a different asset altogether that is consistent with the firm's objectives. The owner will make this judgment based on one or more tangible measures that are tracked over time. How the asset is used will involve production processes designed for improved economies of scale, economies of scope, and efficiency gained from the effects of cumulative learning (Besanko et al., 2007; Pindyck & Rubinfeld, 2001). Typical measures of efficiency are shown in Table 2: Examples of Efficiency Measures.

As promising as efficiency seems to us, it is not always easy to achieve. If it wasn't for loyal managers committed to improving work processes so that costs and variation are reduced, many of the products we enjoy would be too

Table 2: Examples of Efficiency Measures

Operational Performance
Productivity = Output ÷ Input
Productivity = Units produced per unit of time (per hour, day, week, month, quarter, or year)
Productivity of Labor = Output ÷ Cost of Labor used to produce the Output
Productivity = Actual Output ÷ Expected Output
Financial Performance
Short-Term Financial Performance of a work unit = Percent variance from expected performance
Financial Performance = Profitability, Return on Assets (ROA), Market Value

expensive for most people to purchase and use effectively. It is the cluster of constraints on efficiency with which managers must contend on an operational basis. To this we turn next.

CONSTRAINTS ON EFFICIENCY

At least six types of constraints affect efficiency: natural, process, structural, behavioral, legal, and moral. While a more complete discussion of these constraints might be offered, these are introduced only briefly to provide the reader with an understanding of why efficiency is sometimes difficult to achieve and some of the reasons why managers are interested in efficiency.

Natural. The natural limitations of raw materials and the presence of unfavorable contingencies work continually against efficiency. For examples, humans work against conditions found in nature, such as gravity, temperature, pressure, wind, rain, ice, molecular bonds, friction, size, and many other factors. Humans choose to create useful products in the presence of toxins, impurities, mold, pests, bacteria, viruses, and other things harmful to humans. Certain raw materials decay rapidly, break easily, or leak out when not properly contained or handled. These and thousands of other factors make achieving efficiency difficult, requiring the attention of operational managers and their subordinates.

Process. One reason, perhaps, that managers tend to work hard at improving efficiency is that when left

unmanaged, organizational systems and work processes tend toward chaos (entropy). All work processes have built-in constraints on productive capacity because of the type of technology used. Both machines and human beings have limitations on the maximum throughput capacity. Because of this, when inadequately managed, many work processes develop bottlenecks, which make advances in productivity difficult to achieve (Goldratt & Cox, 1992; Hsu & Sun, 2005).

Structural. Organizational structural choices also have an impact on efficiency. Some organizational choices improve efficiency while others make efficiency more difficult to maintain. For example, as organizations increase in size, efficiency can be more difficult to achieve. Centralized decision making in small organizations can be more efficient than decentralized decision-making authority. But as organizations grow, efficiency can be maintained as the organization transitions toward a more decentralized decision-making authority.

Behavioral. Making complex products and services that the world uses to make life comfortable, and in some cases livable, requires workers to make adjustments to their mental, physical, and social interactions with the world at work. Such adaptation requires learning; forming new habits; developing new skills; putting aside self-interests for the sake of others; and maintaining a focus on the parameters that materials, machines, and fellow workers bring to the work processes. Many work processes stretch individuals beyond their normal “comfort zone” of thought and action. After working at a high level of intensity, fatigue begins to compete with efficient work. Some people are content to delay taking actions on difficult tasks in favor of working on easier tasks. All of these human constraints tend to work against efficiency.

One could argue that working efficiently contributes to a sense of purpose and meaning in life. Carried to an extreme, however, the push toward efficiency may actually undermine the sense of purpose so that work becomes meaningless toil reminiscent of Ecclesiastes 10:5: “The toil of a fool so wearies him that he does not even know how to go to a city.” Meaning in life may give way to the pressure of performance graphs and the never-ending push for marginal improvements. The result is that humans may push back against this sense of meaninglessness by trading off a measure of efficiency in order to preserve their well-being.

Legal. For all the reasons that laws and regulations are established in society, such as in reaction to abuses against workers or the collective efforts of political groups, society imposes legal constraints on managers which make achieving efficiency more difficult. For all the good that laws and regulations do to protect workers, consumers, and the environment, they also can make the job of efficient production more challenging. These constraints require managers and workers alike to use their creative abilities to abide by the laws and at the same time find innovative means to make and deliver products.

Moral. Stripped of moral boundaries, almost anything might be allowed in the pursuit of efficiency as long as that behavior does not violate the law or the managers don’t get caught. Striving for efficiency at the expense of values such as integrity, respect, and dignity for humans is dangerous because unchecked it will inevitably destroy morale, cohesiveness, and organizational effectiveness. This ripens the business situation for conflicts between moral standards and efficiency (Donaldson, Warehane, & Cording, 2002).

Moral constraints on efficiency are likely to be of special interest to the Christian in business. It is the fabric of this constraint which is implicitly developed in this paper through the lens of biblical theology.

BIBLICAL THEOLOGY THEMES AND CONCEPTS

The traditional bodies of theological literature generally do not allocate much, if any, space to business concepts such as efficiency. The word does not appear in the Bible; however, this fact should not discourage us from evaluating whether the concept of efficiency is taken up by Bible writers. As will be shown below, this is, in fact, the case.

Several themes in biblical theology and concepts seem to be directly or indirectly related to the question of productivity. Biblical themes and concepts are relevant to the central question of this paper for at least three reasons. First, biblical themes form the context of moral thinking in the Bible, shaping the particular ways by which Christians make choices which result in constraining the drive to efficiency. Second, biblical themes allow for economic dimension within the context of a relationship with God. While these themes do not explore the specific details or methods to achieve productivity, they provide an important grounding for our expectations. Third,

relevant biblical themes support an expectation of high productivity to be enjoyed in the covenant community.

The biblical record relevant to the question of productivity can be organized into two sets of themes and concepts. One set of biblical themes points to broad, general expectations of life in community. The other set of concepts is the cluster of instrumental means to achieve productivity while living in covenantal community. We will explore general expectations first. See Table 3.

Table 3: Biblical Concepts Relevant to Productivity

Biblical Themes Relevant to Productivity	Instrumental Values That Influence Productivity
Creation	Truth
Covenant and Shalom	Wisdom & Prudence
Fruitfulness	Usefulness
	Stewardship

Creation. The Creation account describes God's interest in the material dimension of life (see 1 Timothy 4:4). "God did not have to create us with a need for material things or a need for the services of other people... but in his wisdom he chose to do so" (Grudem, 2003, p. 27). He is the Creator of all material (Davidson, 2008). We should correctly assume that in all our work, either directly or indirectly, we work with that which has come from the hands of the Creator himself. By extension, such work deserves the degree of reverence due to the Creator. Productivity is achieved with what God owns. Ultimately, our efficiency depends on diligent work with his assets.

One of the first lessons we learn from Creation theology is that human life begins with an encounter with God (Doukhan, 1993, p. 208). Humans are utterly dependent upon God for their existence and sustenance. They are also dependent upon the soil for sustenance. Regardless of whatever humans do on the earth in terms of productive work, these fundamental relationships cannot be forgotten (Hiebert, 2001, p. 13). Because humans are dependent on their environment to survive and since this is a dependence structured at Creation, we must ask ourselves: To what degree or in what ways do humans have responsibility to manage this dependence? Is this to be an active or passive dependence? Does dependence mean that humans should simply be gatherers of what the earth produces on its own, or does it suggest that humans will do all in their human power to encourage the earth to increase what it produces?

God is an efficient worker, first preparing the planet for life and community and then creating community that can be sustained by the earth (Genesis 1; Fretheim, 2005). The Bible describes God as being a skillful and clever worker both in Creation and in Redemption (Psalm 136:5; 139:15; 1 Corinthians 3:7-9, 19; Jensen, 2006; Perdue, 1994; Scott, 1960; Banks, 1994). While God creates *ex nihilo*, something not possible for humans, humans are co-creators with God (Larive, 2004, p. 73; Stevens, 2006). At the creation of the earth, the very next step of the process was to make the planet begin flourishing (Genesis 1:1-10). Yet, he asked humans to participate with him to bring forth the potentiality that the good earth offered (Novak, 1982, p. 39).

A few other observations can be made from the Creation and Fall in terms of economic activities. Barry Gordon (1989) suggests that God created humans with the ability "to cope with the burden of opportunity cost," which involves foregoing the benefits of outcomes from discarded choices. As beings holding responsibility for dominion over the earth, humans will desire to promote similar results from their work. God made us with:

a desire to be productive, to make or do something useful for other people. Therefore, human desires to increase the production of goods and services are not in themselves greedy or materialistic or evil. Rather, such desires to be more productive represent God-given desires to accomplish and achieve and solve problems. (Grudem, 2003, p. 28)

The earth naturally produces green beans, tomatoes, potatoes, corn, soy beans, apples, cherries, peaches, blackberries, and strawberries. But nature produces in more abundance when it produces through the efforts of human beings working side-by-side with it to subdue the fields and orchards by tilling, planting, pruning and, many other activities which have an impact on productivity. The implication of this is that human beings are unusual among creatures in the ability to increase the carrying capacity of the earth to sustain human life.

After the Fall, the ground was cursed (Genesis 3:17). Gordon (1989) describes the result of this as humans being in a "self-elected contest with scarcity" (p. 4). But the earth still supported population growth (Genesis 4:1-2). Through division of labor, the post-Edenic family — with God's help — was able to provide for themselves. As predicted by God, because of sin, it is difficult to engage in efficient work. As a result of the curse after sin, the soil became more difficult to work (Genesis 3:17-19; 5:29). Work is not always enjoyable (Ecclesiastes 2:17, 23). In

addition, human overlords have a tendency to require more and more from workers, making their whole experience one of toil (Exodus 1:9-13; Deuteronomy 26:7).

In spite of the tendency to misuse authority to extract burdensome toil from workers, a “good” element of creation is that God made humans with “purposive rationality” (Packer, 1990, p. 20), which can be applied to solving the problem of difficult work and needs to be accomplished for the glory of God and the good of humans. “It is only through work that people can tap the richness creation has to offer, and it is through organizations that this work is carried out most effectively” (Calvez & Naughton, 2002, p. 10).

As an architect of useful, productive time for work, God designed human economy to be built around the concept of Sabbath (Genesis 2:1-3; Exodus 20:8-11; 23:10-12; Leviticus 23:3). At the end of Creation week, God blessed the Sabbath (Genesis 2:3). Here God’s benediction is for a recurring period of time set aside, time representing unused capacity for the purpose of fostering the covenant relationship with his creatures (Adeney, 1988b, p. 307). In purely economic efficiency terms, the seventh day is equal to 14.286% of time during which no work is accomplished. Instead, it is “used” (if one can speak of the Sabbath in terms of utility value) to respond to God and nourish the relationship with him. According to Christian economist Henry Rempel, from an economic perspective Sabbath “means that there is more to life than greater efficiency in the production of material goods and services” (Rempel, 2003, p. 61).

There may be a practical interdependence between six days of productive labor and the Sabbath rest. Without the Sabbath-rest type of relationship with God, the six days of productive labor would be nothing more than meaningless toil without rest for body, mind, and spirit. We might even say that Sabbath is necessary for productive work. Without Sabbath, humans would be doomed to an existence of ceaseless labor with very little to offer in terms of ultimate meaning. Taking one day in seven rests the body and mind. It allows for the rejuvenation of the human spirit. Under very difficult working conditions, Sabbath is vital to preserving emotional health and wellbeing. But, perhaps the opposite also is true. Without productive labor, Sabbath rest might be difficult to experience. The principles imbedded in the concept of Sabbath, as well as the economic implications, are applied by the Bible to the sabbatical year. Under the Old Testament economy, every seven years the land was allowed to return to its natural abilities without human effort applied to

production. Because of this, those engaged in agricultural businesses could not earn a profit from the land during the sabbatical year. By observing the sabbatical year, the people were acknowledging God’s ownership while they also showed their trust in his sustenance (Kiuchi, 2007). Clearly, Sabbath and sabbatical are structural constraints on human productivity (see Gordon, 1989, p. 17).

Sabbath, occurring all throughout the productive work cycle, was not the only structural constraint. The produce of the land was to be tithed which in effect is a 10% reduction in productivity after the productive processes have been at work: “Thus all the tithe of the land, of the seed of the land or of the fruit of the tree, is the LORD’s; it is holy to the LORD” (Leviticus 27:30). “You shall surely tithe all the produce from what you sow, which comes out of the field every year” (Deuteronomy 14:22). “You shall give him the first fruits of your grain, your new wine, and your oil, and the first shearing of your sheep” (Deuteronomy 18:4).

At Creation, God asked humans to work in caring for the productive capacity of the earth (Genesis 1:26-28). He pronounced that we are to be fruitful and multiply as a species. In practical terms, multiplying can be sustained only through productive use of the natural resources for growing food and making available clean water. He also stated that they should have dominion over and subdue the earth. This dominion is both a privilege and a responsibility (Packer, 1990). Grudem (2003) states that the Hebrew word translated as “subdue” “implies that Adam and Eve should make the resources of the earth useful for their own benefit...” (pp. 25-26). Other scholars emphasize the strength of the verb referring to royal control and domination. In contrast, Davis (2009) does not see royal dominion terms in the passage but rather the firmness (but not harshness) of a loving shepherd as he travels around the earth with his sheep (p. 55). Regardless of the view one takes on this passage, as God’s viceroys on earth, men and women are to care for the earth in the same spirit of stewardship, attention to detail, and responsibility that God himself cares for the planet and its inhabitants. In Genesis 2:15, the Hebrew suggests that humans are working in service to the earth. In this lies an important tension. The commission to rule the earth bringing nature under human control by human effort is coupled in Genesis with the commission to serve the earth by caring for it, its productive capacity, and its needs and also serve by protecting the earth from harm that humans are at risk of doing as they rule the earth (Genesis 2:5; 3:23; Geisler, 1989, p. 305; Hiebert, 2001, pp. 14-15; Davis, 2009).

Perhaps the blending of rulership and servicership involves taking care as we assist the earth's natural processes that are at work so that the earth can reveal its productive potential. If this is a valid way of understanding the Genesis account, humans and earth together work as a unified whole to enhance the earth's goodness and thereby bring glory to the Creator. Put in other terms, humans can worship God by helping the earth realize its God-intended potential but not to such an extreme that the welfare of the earth is harmed (Butkus, 2001, pp. 19-20).

[Humans do] not take priority over the land. Adam comes to Eden as a protector, answerable for the well-being of the precious thing that he did not make; he is to be an observer, mindful of the limits that are built into the created order as both inescapable and fitting. (Davis, 2009, p. 31)

Is it stretching the biblical principle too far to claim that when humans work with nature to reveal its true productive potential, though in ways that protect the earth and its needs, we are working with the elements of what we have come to call "general revelation" of God (Romans 1:20)? If this is true, what humans do regarding productive potential of the earth, respecting the limits of both humans and all of creation, can it be said that humans are participating with God as co-workers in general revelation? This paper suggests that such a conceptual linkage is biblical.

It may be relatively easy to see how ruling and serving combine in the work of farming. The farmer temporarily scars the top soil by turning it over, allowing oxygen, water, and other nutrients to penetrate the upper layer of soil so that the seeds can bear more fruit. The natural processes heal the scar and increase yield. But can the human who works in a copper mine view his work in the same biblical frame of reference? Can the owners of an iron ore mine, a coal mine, an iron refining plant, a bauxite factory, and an oil refinery similarly view the work of their organizations from this biblical record? When an oil well is drilled, pump installed, and maintained in an efficient manner so that it fills the pipeline to the oil refinery, does this work also fit under the category of ruling and serving? How about the work of the oil refinery that transforms the crude oil into a variety of petrochemical fuels which are then used to increase efficiency in working with other resources of the earth? Can the work of these types of organizations that produce component parts for or materials used in the farmer's equipment also be scripturally framed through this Genesis account? Such questions reveal that the tension between ruling and keeping extend

beyond agricultural pursuits and potentially include all gainful activities involving interaction with the earth.

Another relevant, and related, tension is present in the Creation account. Humans were given dominion over nature (Genesis 1:28; 2:19-20; 9:2; Psalm 8:6-8), but at the same time are relatively insignificant creatures in the context of the immense universe.

These two views are often used in the same context (see especially Ps 8 and Gen 1 and 2), so as to convey the idea that both should be assumed together. In fact this tension is vital since it preserves man from two often experienced pitfalls, namely idolatry and ecological abuse. (Doukhan, 1993, p. 197)

Another dimension of Creation theology important in this paper is that God not only created but also remained present for sustaining life. "Thy righteousness is like the mountains of God; Thy judgments are like a great deep. O LORD, Thou preservest man and beast" (Psalm 36:6). "He causes the grass to grow for the cattle, And vegetation for the labor of man, so that he may bring forth food from the earth" (Psalm 104:14). "Look at the birds of the air, that they do not sow, neither do they reap, nor gather into barns, and yet your heavenly Father feeds them. Are you not worth much more than they?" (Matthew 6:26).

Sustaining life assumes that those involved achieve at least a minimal level of productivity. But is God a minimalist, sustaining life at the bare subsistence level, encouraging just barely enough productivity to meet the needs of today? The biblical record suggests not. Rather, God is interested in a level of productivity that results in flourishing.

Covenant. One of the central themes of Scripture is that of covenant (*berith*) (Hafemann & House, 2007; Dumbrell, 1984; Brueggemann, 2002; Dyrness, 1977; Hasel, 1972; LaRondelle, 2005; Robertson, 1980). It is the Creator who is also the giver of covenant (Grant, 2003). The significance of covenant in this context is that the principles of covenantal living demonstrated by God are to be imitated (Allen, 1984; McCann, 1997; Herman, 1997; Pava, 2001; LaRondelle, 2005; Lee, 2011). Relevant to the topic of this paper is that covenant contains an economic dimension rooted in the land.

The promise of land, one of the chief wealth-building assets available in Bible times, became closely associated with the fulfillment of God's covenant (Genesis 12:7; 15:7, 18; 17:8; 35:12). Land was central to and revealed the status of the covenant relationship as Davis (2009) points out:

Overall, from a biblical perspective, the sustained fertility and habitability of the earth, or more particularly of the land of Israel, is the best index of the health of the covenant relationship. When humanity, or the people Israel, is disobedient, thorns and briars abound (Gen. 3:17-19); rain is withheld (Deut. 11:11-17; 28:24); the land languishes and mourns (Isa. 16:8; 33:9; Hos. 4:3). Conversely, the most extravagant poetic images of loveliness – in the Prophets, the Psalms, and the Song of Songs – all show a land lush with growth, together with a people living in (or restored to) righteousness and full intimacy with God. “Truth” [or: faithfulness, ‘emet] springs up from the earth. (p. 8)

Likewise the promise of a great nation comprised of a multitude of people implies the ability of the nation to produce a sustainable amount of food and other resources obtained from managing flocks and herds (Genesis 26:12). Apparently faithfulness to God coupled with practical wisdom is how covenantal faithfulness as a whole can be advanced so that covenant promises are realized. (See for example Genesis 13:6-17; 36:7; Ecclesiastes 5:11.)

In the context of business relationships, the Bible presents the value of justice and fairness, which is the foundation of all covenantal relationships (e.g., Genesis 19:18; Psalm 89:14; 97:2; 106:3). We must conclude that relationships with customers and employees are to be founded on the same principles. We reason from this that promoting a relationship with customers by being marginally more efficient than competitors (and thereby offering lower prices) must not be achieved at the expense of the covenantal relationship with employees (Jeremiah 17:11). Hence, the covenant principles are central to biblical morality which is an important constraint on efficiency. Likewise, a business owner must not let employees’ personal interests interfere with maintaining a covenantal relationship with customers (Proverbs 23:4-5; Proverbs 27:23-27). This tension is not fully resolved in the Bible but seems to be present under the banner of a broader, fundamental principle of living in the fear of God.

God’s covenant reveals that he is interested in any technology used by humans as they serve each other in the marketplace. The major business technology mentioned in the Bible is the technology for trading, namely weights, measures and scales. For example “You shall not have in your bag differing weights, a large and a small” (Deuteronomy 25:13). “Do not act dishonestly in using measures of length or weight or capacity. You shall have a true scale and true weights, an honest ephah and an hon-

est hin. I, the LORD, am your God, who brought you out of the land of Egypt” (Leviticus 19:35-36). “A just balance and scales belong to the LORD; all the weights of the bag are his concern” (Proverbs 16:11).

Extracting the principle embedded in these and similar passages, we reason that those who engage in business are to consider their business technology as belonging to God not merely because he is the owner of all things earthly, but also because the business transactions in the market that involve the use of his assets for the good of his creatures must be carried out in a way that honors him and watches out for the interests of his community. Accordingly, any work that humans do with technology to advance their economic welfare is a work for and with God. As humans devise inventions which are useful for promoting justice, they are also advancing God’s work on earth. By the same token, it is an abomination to do wrong to others under the charade of using technology designed to promote fairness.

Closely related to the biblical theme of covenant is that of *shalom*. Indeed, it is the experience of *shalom* which is envisioned in the fulfillment of all the covenant promises. It is difficult to find one word which encompasses the full range of meaning of the Hebrew word *shalom*. Perhaps wellbeing in every dimension of life comes the closest. *Shalom* is rooted in the concepts of righteousness, steadfast love, and faithfulness to the covenant (Brueggemann, 2001; Stendebach, 2006). It embraces spiritual, social (2 Chronicles 15:5; Proverbs 16:7), international political (1 Chronicles 22:9), physical (Job 5:23-24; Jeremiah 33:6), and economic dimensions (Psalm 85:8-13; 122:6-9).

One of the poetic passages of Scripture records Solomon’s prayer for peace for his son, expected to be the next king (Psalm 72). In this passage, we see that *shalom* comes from God in the forms of righteousness, help to the poor, freedom from oppression, rain for crops that bring abundant harvests, international harmony and political power, economic power, and worldwide worship to God.

In Zechariah 8:16, “the people are called upon to practice *mispat shalom*, judgment for peace. The intended purpose of law is *shalom*. This means not simply making peace between contending parties, but promoting the prosperity of the people. In verse 19, the people are exhorted to “love truth” (*met*) and *shalom*. In parallel with *met*, *shalom* most likely means a social environment that can be described as “peace and beneficial effects of all sorts” (Stendebach, 2006, p. 39).

The biblical concept of *shalom* includes an economic dimension (Psalm 122:6). Implied in this dimension is an

assumption that humans who wish to participate in the blessings of shalom will do so not only at the tabernacle during worship but also in the context of marketplaces where they must conduct business in order to achieve prosperity. Wealth is the fruit of faithfulness to covenantal law, wise human effort, and God's gift (Joshua 1:8; Psalm 1:1-3); however, it seems reasonable that such prosperity is realized only if one is efficient in his work.

Biblical discussions of shalom are broad in scope and do not attempt to explain all the operational details of economic life, such as the best ways to achieve productivity. Nevertheless, the promise of economic prosperity, an integral element of shalom, is not contradictory to the practical effects of efficient work in the fields, the grinding mills, and among the flocks and herds. One might argue that while shalom is the covenantal gift of God to those who are faithful to him, such a gift is mediated in part through the wise efforts of workers who approach their tasks as faithful stewards.

Fruitfulness. Another underlying theme in Scripture is that of fruitfulness (*parah*) and, in contrast, barrenness (*aqar*). Fruitfulness, God's original plan for the earth and for society, is contrasted with barrenness and waste, which come as a result of sin. So powerful is this contrast that the fruitfulness of the land and the wasted land ideas were used as metaphors for how God will bless or destroy (Genesis 17:6; 28:3; Psalm 105:24; 107:33-40; Isaiah 5:5-6). The fertility or sterility of the land is second in value only to fertility of the womb. Fruitfulness of the land is regarded as bringing satisfaction (or disappointment) to people when God blesses with fruitfulness or curses with barrenness (Deuteronomy 7:13; Psalm 107:24-43; Mackie, 1988, p. 248).

At Creation it is God's powerful word that overcomes the chaos of a desolate world without form and void so that it can be a productive place for his creatures. From the Creation account (Genesis 1:26-28) forward, all Scripture writers show positive regard for fruitfulness and a disdain for barrenness. Fruitfulness in material things (e.g., bearing children, growing the population of the nation, fertility of the earth for growing crops, expanding herds and flocks, and enjoying the results of one's labor) is inseparable from fruitfulness in spirituality. God's promise to Abraham that he would be the father of and a blessing to a great multitude included the promise of protection and prosperity (Waltke, 2007b, p. 320). When the covenant relationship with God is broken, people treat each other unjustly and the fruitfulness of creation is

harmed. But when the covenantal relationship is restored, the fruitfulness of the environment is also redeemed (Miller, 1979, pp. 15-16).

A by-product of this, or perhaps more accurately a positive influence on fruitfulness, is operational efficiency. Israel was instructed to prune fruit-bearing plants as a means to prepare for the sabbatical year. Pruning results in higher production (Leviticus 25:3-4; John 15:1-2). When searching out the land of Canaan, the Israelite spies were instructed to evaluate the productivity of the land (Numbers 13:19-20; see also Joshua 5:12). The implication is that higher production is better than lower production. Careful breeding of sheep will result in a wealthier flock (Genesis 30-31; 30:43; Proverbs 27:23-24).

In contrast to the concept of fruitfulness, waste, unproductive resources, and desolation (*shamem*) are spoken of in strong disapproving tones in the Bible (e.g., Deuteronomy 29:23; 2 Kings 2:19; Nehemiah 2:17; Job 12:24; Psalm 107:34-40). Waste goes against God's design; productivity supports his plan. Productivity is a sign of reverence to God, who gave all the wealth-building assets of the earth and with whom we work when we serve each other. When humans work with God as joint tenants of the land and its resources, we will do all we can to minimize waste and in so doing respect God who is the true Owner.

Instrumental Values and Virtues Relevant to Productivity

We move from the broad, general expectations of productivity as an important dimension of the covenantal promises of God to the instrumental means by which productivity is achieved. Another way of seeing this is that some of the instrumental means represent God-designed values that are prized among members of the covenant community. This section is not intended to be an exhaustive treatment of instrumental virtues and values mentioned in the Bible. Those explored here are, in the opinion of the author, at face value directly related to the topic of efficiency. They include: truth, wisdom, prudence, usefulness, and stewardship.

Truth. The manager's work with respect to truth (*emeth*) is not limited merely to pursuit of the truthfulness of information and integrity of speech (as opposed to lies) or through this gaining knowledge about reality (Genesis 42:16; 1 Kings 22:16). Truth involves this but has a much deeper, more profound meaning relevant to our discussion here. The biblical concept of truth means

faithfulness of action (Berkovitz, 1969). When the king, emulating God's character, builds his kingship on truth, he builds it on actions of faithfulness to covenant relations and loving kindness (Proverbs 28:20; 29:14). In essence, advancing truth means advancing the cause of faithfulness to commitments in and around the covenant community.

Truth means ensuring that actions have lasting validity. It also means being a reliable messenger of information about reality. In terms of the manager's desire for efficiency, workers who seek to shape their productivity with truth will avoid achieving short-term gains in productivity at the expense of long-run flourishing. Said in the reverse, achieving short-term gains in efficiency at the cost of long-run success is a form of being counterproductive.

Only by getting to the truth about fact-based reality of an organization's performance and revealing this to the key stakeholders can decision makers make informed decisions which, when acted upon, create lasting validity for the community that is considered just. Without this, relevant corrective actions in production cannot be taken with confidence. Taking corrective actions based on the truth of a situation ensures that these actions of faithfulness will advance the overall purpose of the organization. This understanding of truth is directly related to the concept of shalom. It is reliability, stability, and faithfulness in daily actions that accompany complete wellbeing and prosperity envisioned in covenantal relations of salvation history. Accordingly, the biblical concept of truth becomes an element in the moral constraint on efficiency.

Wisdom and Prudence. The fundamental ideas from the Hebrew concept of wisdom (*chokmah*) mean firm and well grounded first of all in the fear of God and second in the business of living life (Dyrness, 1977, p. 189, 195; von Rad, 1962, p. 418; Müller, 1980). Wisdom cannot be understood apart from its relationship to covenant (Grant, 2003; Hubbard, 1966; Waltke, 2008; see also Eakin, 1977). It means being intensely prudent but also ever mindful of one's relationship with God (Breuggemann, 2002, p. 234). As applied to practical life, wisdom means "generally, 'masterful understanding,' 'skill,' 'expertise'" (Waltke, 2007a, p. 913; see also Fox, 1968; Collins, 2009). Indeed one of the fundamental ideas associated with wisdom is the ability to consider something diligently or closely and thereby have insight and understanding (Ringgren, 1977). This seems especially applicable to the question of productivity when considering the need to learn from the earth while keeping it, as described by Davis (2009). In one of the few statements seemingly in support

of productivity Davis says: "Wisdom does not consist only in sound intellectual work; any activity that stands in a consistently productive relationship to the material world and nurtures the creative imagination qualifies as wise" (p. 144). But she then criticizes the technical progress that humans have made in the industrial setting. Taking an inefficient work process and making it productive requires the kind of learning that encompasses not only technical knowledge but also systems thinking viewing steps in a process that is connected to other processes, a knowledge of human nature, and commitment to moral principles.

Like thought, contemplation, emotions, discernment, and the center of ethical activity, the seat of wisdom is in the heart (Proverbs 2:10; 15:14-15; 23:17; 24:12). This means that the essence of practical wisdom which operates in the larger context of God's will is more a matter of character than merely intellect or pragmatism. It is the "life of worship extended to the home and marketplace. Wisdom is religion outside the church" (Dyrness, 1977, p. 189).

In the Old Testament, wisdom is applied to technical and artistic skills (Exodus 28:3; 31:6), the magic arts (Exodus 7:11; Isaiah 3:3), government (Ecclesiastes 4:13; Jeremiah 50:35), diplomacy (1 Kings 5:7), war (Isaiah 10:13), judgment and rule of a nation (1 Kings 3:28; 4:29-34; Proverbs 20:26; Isaiah 11:1-6), intelligence to master people and situations (2 Samuel 14:20; Job 39:17), and the ability to answer difficult questions (1 Kings 10:2-4; Waltke, 2007b). It is a short step of logic to assume that the concept of wisdom encompasses actions designed for improved efficient production.

One risk is that unattended wisdom will be turned toward selfish means and ends. Shrewdness and craftiness are generally looked upon as being contrary to true wisdom which always finds its basis in the relationship with God. Thus, we are admonished to watch over our hearts with diligence (Proverbs 4:23).

Closely related to the idea of wisdom is the concept of prudence (*ormah*). Prudence has been called the "pilot virtue" of the moral life since it concerns making decisions with one's conscience as the guide (Kaiser, 1966, p. 265). While prudence includes the idea of being pragmatic, it is not mere pragmatism, for even the most practical teaching is theologically based. The pragmatic approach seeks to come to terms with the nearly-hidden order of God that must be embraced and accepted as the only viable context in which an effective, joyous, and secure life can be lived. (Breuggemann, 2002, p. 232)

Prudence means careful discretion when applying knowledge to everyday life; however, prudence is not merely mental activity (Holloman, 2005). It is practical reason in action relative to the activities of life in an uncertain environment where contingencies must be considered (Aquinas, 1947). It is the ability to be shrewd and thereby keep oneself from being misled (Kooy, 1962).

Discretion (*sekel*, *mezimmah*) and cleverness (*bin*) can be used to serve evil purposes as well as good ones.

It is thus significant that Proverbs 1:3 incorporates reference to “faithfulness, judgment, and uprightness” and that Proverbs 1:7 adds that reverence for Yhwh is the beginning or first principle of wisdom; the hearers are not to follow the example of the people of intrigue (who ignore the first) or the serpent (who ignored the second). Faithfulness, judgment and uprightness are, after all, the characteristics of Yhwh’s own person, and they are, thus, the qualities or stances that Yhwh looks for in people. (Goldingay, 2006, vol. 2, p. 583)

When one applies these ideas to the questions related to efficiency, it seems clear that decisions to improve productivity can be made in a crafty, scheming way to take advantage of either customers or employees who must bear the burden of work. But such decisions can also be made in support of faithfulness and righteousness. The New Testament sometimes combines the two ideas of being sensible and faithful, perhaps to highlight that practical wisdom must be infused with spiritual faithfulness to God (Matthew 24:25; Luke 12:42). Exactly how this is achieved in the varied contexts of business is not a topic that the Bible explores in depth; however, we seem to find in Scripture that the virtue of prudence is especially applicable to those in charge of organizations who have the stewardship responsibility to make decisions which affect multiple groups of stakeholders (Kaiser, 1966, p. 265).

Usefulness. The Scripture assumes that humans will attempt to be as productive as possible. Usefulness (*sakan*, *tsaleach*), the biblical concept that is most directly related to the concept of efficiency, is prized in Scripture. For examples, consider the following. Disciples are expected to be useful for the expansion of the Kingdom of God. Humans are expected to be useful, and when they are not, they are considered to be destructive (Proverbs 18:9; Titus 3:14). Humans do not go to all the work of planting seeds and tending the crops without expecting that they will get something good in return (Deuteronomy 20:6; Proverbs 27:18; 1 Corinthians 9:7). When they know that harvest

season has come, they will persist in attempting to gather the produce that by right belongs to them (Matthew 21:33-41; Mark 12:1-9; Luke 20:9-15). Specific biblical instruction regarding care for the wealth-building asset of sheep appears in Proverbs 27:23-27. Here the writer commands the sheep owner to know well the faces of his flocks. When the shepherd tends the flocks, the potential for value continues (Goldingay, 2006).

Other implicit encouragement to be efficient is found in Ecclesiastes. Here Solomon explains the trade-off that comes from not using a sharp axe. Either sharpen the axe or become stronger (Ecclesiastes 10:10). If the axe is dull and he does not sharpen its edge, then he must exert more strength. Wisdom has the advantage of giving success. The implication is that it is foolish to toil with a dull axe.

When a resource became unproductive, it was expected that the owner of the resource would correct the problem or simply get rid of the unproductive resource, replacing it with something else that produces. The principle of destroying unproductive assets and replacing them with productive assets may be the rationale behind Solomon’s wisdom that there is a time to plant and a time to uproot that which is planted, i.e., when the asset cannot be salvaged because it is irreversibly unproductive (Ecclesiastes 3:2. See also Matthew 3:10; Luke 3:9; 13:6-7; Hebrews 6:7-8).

Another passage suggests the importance of establishing the proper sequence of work tasks in order to have the most desirable outcome (Isaiah 28:23-29). Here the farmer understands that there is a right time for each activity. In the farmer’s case, he learns directly from God the proper instructions. Workers in other occupations do not have this same benefit but instead must learn from experience and perception, making adjustments according to the various circumstances in which they are working (Von Rad, 1972, p. 140).

Measuring devices were used in Bible times to provide information regarding the relative efficiency of accomplishing tasks with precision and for allocating resources according to a plan or standard. For example, the measure of an *omer* was used when gathering manna (Exodus 16:16-18). Boaz measured grain for Ruth (Ruth 3:15).

The usefulness of *static* efficiency is no doubt in view when:

- Moses gives instruction regarding community responsibilities to care for private property (Exodus 20:15; 23:4; 24:14; Leviticus 19:11-13; Deuteronomy 22:1-4)
- God gives instructions regarding the collecting of manna (Exodus 16:11-36)

- Solomon gives advice to the slothful hunter who lets his prey get away (Proverbs 12:27)
- Solomon gives counsel to consume only what we need (Proverbs 21:20; 25:16)
- The infamous prodigal son wasted his inheritance (Luke 15:14). In this parable Jesus tells how the prodigal makes choices which result in wasting his resources and separating him from his father. Static inefficiency is not the point of the parable, although the title of the parable is sometimes given as “The Parable of the Prodigal (wasteful) Son.” But Jesus used this detail about the son to increase the tension that the listener feels regarding the son, making the grace of his father all the more remarkable.
- Jesus asked the disciples to gather the leftovers after feeding the people (John 6:12)
- Followers of Christ are admonished not to waste time (Galatians 6:10; Ephesians 5:16)

The benefit of *dynamic* efficiency seems to be in view when the psalmist prays for full granaries and tens of thousands of sheep to be born among the flocks on the hills (Psalm 144:13-15). Productivity is not merely an individual matter but rather a community concern. Entering into work with one’s strength and diligence is preferred over weakness and slothfulness (Ecclesiastes 9:10; Romans 12:11; 1 Corinthians 9:24-26). An important reason for this is that work itself is a means by which we can love and glorify God (Mark 12:30-33; Larive, 2004, pp. 142-146; Jensen, 2006, pp. 67-96; Volf, 1991, pp. 136-141). Pulling, lifting, carrying, and placing a load with one’s strength is sure to get more accomplished than weak-hearted attempts at work. Better yet is using suitable technology which makes the tasks easier. In promoting the work of the Gospel, followers of Christ are counseled to make the most of every opportunity (Colossians 4:5).

When the New Testament discusses godliness and good deeds, it does so in terms of utility (1 Timothy 4:8; James 2:14; Titus 3:8). This is not to diminish the importance of the spiritual value of the Bible, godliness, and good deeds as ends in themselves. Apparently the Bible values the practical, instrumental role that these play in our lives.

People were sometimes described in terms of their practical usefulness to others. Paul describes the servant Onesimus to Philemon in terms of his usefulness (Philemon 1:11). He describes Mark as being useful (2 Timothy 4:11). Paul describes sinful humans as being useless before God (Romans 3:12). In Jesus’ parable, he employs strong language of contempt for the slave who is useless to his master (Matthew 25:30).

In tension with the idea of diligence to increase usefulness, we also find in Scripture the concept of contentment. In work we can find contentment. As much as diligence is held in high regard in the Bible, economically unproductive time and activity is allowed and even encouraged (Exodus 20:8-11; 23:10-12; Leviticus 23:3-5; Deuteronomy 5:12; Smith & Wheeler, 1999). Ecclesiastes says that one handful of rest is better than two handfuls of work (Ecclesiastes 4:5-6). And, while diligence produces quantitative economic gain, contentment with that which is produced also produces a qualitative gain from work (Ecclesiastes 2:24-26; 3:4, 10-15; 5:18-20; 7:14). The Apostle Paul wrote from prison to the church of Philippi and said, “I have learned in whatever state I am to be content. I know how to be abased and I know how to abound, I have learned the secret of facing plenty and hunger, abundance and want. I can do all things in him who strengthens me” (Philippians 4:10-13). Here abundance is implicitly valued but constrained by contentment.

At the same time as encouraging utility, the Bible unambiguously condemns achieving utility by immoral actions. Stealing, which in some instances is the most efficient, though not the only, way to obtain goods, is condemned. Stealing Naboth’s vineyard was wrong, as is all forms of improving one’s prosperity at the expense of others (Exodus 20:15; Leviticus 19:11; Deuteronomy 5:19; 1 Kings 21; Matthew 19:18; Ephesians 4:28). The Hebrew prophets speak against leaders who achieve gain at the expense of covenantal relationships with God and with the people (Amos 8:4-6; Hosea 4:1-3; discussed in Davis, 2009, pp. 120-138).

Stewardship. It is at Creation that the concept of stewardship is first introduced. While God is the ultimate owner of all things material in the universe, he has entrusted to humans the responsibility to care for and manage the earth (Genesis 1-2; Oxford, 1990). Stewardship is not merely conservation and prevention from loss (*static* efficiency), but also active production as a way to serve God by contributing toward the sustenance needs of creatures. This does not mean that human stewardship replaces God’s work of sustenance but rather that humans work together with God (Brown, 2001). Stewardship “requires efficiency and productivity. It is commendable to do a better job of managing the created order. That glorifies God, reveals the wonder of God in creation, and services other people more effectively” (Chewning, Eby & Roels, 1990, p. 173). This sentiment is echoed by Boersema (2005):

Christians should not make an idol of efficiency and productivity. Other biblical goals — employment, the environment, etc. — are likely to be more important when trade-offs need to be made. A false dichotomy should, however, be avoided — efficiency versus biblical goals. Stewardship also includes efficiency. (p. 11)

This theological interpretation of the concept of stewardship is also presented in Sproul (2008), who states that because God owns the earth, humans are required to work hard and efficiently to fulfill our role.

Productivity is more than an abstract word used by demanding executives and scientists. It goes beyond pragmatic growth programs and material welfare. Productivity is a spiritual ethical obligation. We are called to be productive by God. God commands that we “bear fruit,” that our work be worthwhile. (p. 47)

The household steward (*asher*, *epitropos*) and the royal steward were important positions in the ancient Near Eastern community (Layton, 1990). Perhaps the most notable example of the successful household steward is that of Joseph (Genesis 37-49). The story of Joseph depicts a faithful steward who was able to increase the wealth of the household by his wise management (Genesis 39:1-6, 22-23; 49:22). His moral steadfastness coupled with his ability to increase wealth made him attractive to the Egyptians. Stewards who served kings helped the king govern either during times of crisis or geographic regions. They also assisted in diplomacy and may have managed the royal estates or the royal household who lived at the palace. Household stewards were expected to be trustworthy and sensible, efficiently allocating household resources to their charges (Luke 12:42; 1 Corinthians 4:2). In the New Testament, Jesus tells a parable about a rich man who had trusted the management of his affairs to an unfaithful steward who wasted his master’s money but was shrewd in his dealings with the household creditors (Luke 16).

The discussion above regarding instrumental values is not complete without an example. Fortunately, the Bible writers collectively provide such an example from discussions about or references to the dominant industry of ancient times: agriculture. The Bible considers agricultural yield in terms of efficiency. To this example we turn now.

Agricultural Yield an Example

Grain farmers were aware of the desirability of and the factors that increase agricultural yield (Genesis 26:12; Matthew 13:8, 23; Mark 4:8, 20; 2 Corinthians 9:6). One

assumption that seems implicit in the biblical discussions of agricultural yield is that higher yield is more highly valued than lower yield. Agrarian workers sowed seed with the hope (and worry?) that the harvest (yield) would exceed the amount sown (see Psalm 126:6). This was a community concern. Productive agricultural work had an impact on the entire community.

In Jesus’ parable of the sower, he used crop yields of 30-fold, 60-fold, and 100-fold in illustration (Matthew 13:3-8; Mark 4:2-9; Luke 8:5-8). McIver (1994) reviews that scholars have been divided whether these figures represent miraculous results or typical results. McIver is of the opinion that they are miraculous results and that typical yields are in the range of 4-fold to 6-fold in the region, though in modern times the highest yield generated with the most scientific farming methods was 32-fold. If McIver is correct, the point of Jesus’ parable must certainly be that when the seed falls into good soil, nothing short of a joyous miracle occurs because of God’s creative power at work. The fact that Jesus refers to crop yields in this manner suggests that his hearers understood the value of higher yields. They must have marveled at the story.

Successful agricultural yield results from the blending of human effort, divine power, and the gifts of God on this earth. The farmer must prepare the field, plant, nurture, prune (Leviticus 25:3; Isaiah 5:1-7; 18:5; John 15:2), protect with the use of walls, hedges, watch towers and watchmen (Psalm 80:12-13; Song of Solomon 2:15; Isaiah 1:8; 5:2-5; Jeremiah 4:17; Matthew 21:33; Mark 12:1), use animals to help with the work (Proverbs 14:4), and then harvest the fruit (Conrad, 1993). It is the work of God — the effect of rain, water from streams and rivers, the sun, and nutrients in the good earth, all of which are gifts of God — which produces the increase in yield which the farmer uses to sustain his family and to sell to others who need food (Deuteronomy 33:14; Psalm 67:6; Isaiah 30:23; 55:10-11; Jeremiah 17:8; Ezekiel 17:5; Hebrews 6:7). Of particular interest here was the need to prune trees and vines. Pruning allowed for “new growth and the removal of nonproductive or old vines” (Matthews, 1988, p. 57).

The concept of an increase in yield from agricultural work is used in the Bible as a metaphor for developing spiritual growth and perseverance (Matthew 13:8, 23; Mark 4:1-20), fostering dependence on God (John 15:1-8; 1 Corinthians 3:6; 2 Corinthians 9:10), demonstrating the power of the Gospel (Isaiah 9:2-3; Hosea 10:12; Colossians 1-6), bringing glory to God (Romans 7:4), and doing good works for others (Colossians 1:10).

God's work in giving the former and the later rain becomes a metaphor for the outpouring of the Holy Spirit on God's people to prepare them for the future harvest (Joel 2:23-29). Abundant crop yield generally is a sign of God's blessing and human intelligence (Genesis 26:12; 30:30). The prophet Amos foretells a time when God's people would enjoy extraordinary agricultural production, revealing a time when the covenant principles would be wholly embedded in society (Amos 9:13; Volf, 1991, p. 165).

The people feared several types of threats to agricultural yield. They feared harvesting crops that appear to be productive but in reality are worthless (Hosea 8:7). Sowing but not being able to reap because of invading armies is grievous (Leviticus 26:16; Deuteronomy 28:33, 50-55; Isaiah 1:7; Jeremiah 5:17; 8:16). More than this, it is a sign that God's blessing is no longer enjoyed — a curse of even greater magnitude than the loss of food. Allowing the land to be overtaken by weeds destroys its ability to produce crops (Hebrews 6:7-8). Drought destroys the life-giving power of the land and ultimately human life. Clouds bring life-giving rain but storm clouds can bring hail that destroys. Crops can be stricken with blight or mildew. Also, pests such as locusts and caterpillars can devour the harvest before it is taken in (Exodus 9-10; Deuteronomy 28:22; 1 Kings 8:37; Amos 4:9; 7:1; Haggai 2:17).

At least four measures of efficiency are mentioned explicitly or implicitly in the Bible. All of them appear to support the idea that measuring efficiency is to be expected of wise and sensible stewards. Some are mentioned in the context of parables whose intent was to teach important spiritual principles of God's kingdom. Sometimes the mention of yield explicitly refers to material results of agrarian activities. Other times the concepts are used metaphorically to refer to spiritual dynamics (Leviticus 25:11; 2 Kings 19:29; Ecclesiastes 11:4; Isaiah 37:30; Hosea 8:7; 10:12; Micah 6:15).

One measure used in agriculture appears to be based on a ratio of seeds sown to seeds harvested (Matthew 13:8; Luke 8:8; Deuteronomy 1:11). Another measure appears to be based on the amount of acreage required to produce a certain amount of harvested food (Leviticus 26:16; Isaiah 5:10). A third measure implied in the Bible is what might be called the labor-to-yield ratio, i.e., how many paid workers the sowing, caring, and harvesting require to gather in a certain yield (Matthew 9:37-38; 20:1-16; Luke 10:2). A fourth measure is the idea of comparing the value of what one owns before

Table 4: Measures of Efficiency in the Bible

Measure	References
Seeds sown to seeds harvested	Matthew 13:8; Luke 8:8; Deuteronomy 1:11
The amount of acreage required to produce a certain amount of harvested food	Leviticus 26:16; Isaiah 5:10
Labor-to-yield ratio, i.e., how many paid workers the sowing, caring and harvest require to gather in a certain yield	Matthew 9:37-38; 20:1-16; Luke 10:2; Proverbs 3:13-14; 15:27;
Comparing the value of what one owns before diligent work with the value after work—the idea of gain or profit	Ecclesiastes 3:9; Jeremiah 6:13; 12:13

diligent work with the value after work — the idea of gain or profit (Proverbs 3:13-14; 15:27; Ecclesiastes 3:9; Jeremiah 6:13; 12:13). It might be noted here that the idea of achieving gain is not criticized per se but rather achieving gain unjustly or dishonestly (e.g., Jeremiah 8:10; 22:17). See Table 4.

Imitatio dei

One significance of the theological themes is that of imitating God (*Imitatio dei*). This theme runs throughout Scripture (Leviticus 11:45; 19:2; 20:7; Matthew 5:48; Luke 6:36; John 13:15; Ephesians 4:23-24; 5:1; Philippians 2:2-11; deSilva, 2001, pp. 41-51; Waltke, 2008). Volf (1991), Larive (2004), and Jensen (2006) employ the concept of *imitatio dei* throughout their writing on the theology of work. LaRondelle (2005) applies the concept to covenantal relations.

Imitating God involves working in ways that are designed to improve the ability of people and the earth to flourish. One can argue that imitating God involves being as productive as possible but in ways that are consistent with covenantal living. In other words, imitation is not limited to private spiritual experience but can be applied to all dimensions of human experience, all moral actions in a social context. It also applies to the world of productive work:

When we work to produce (for example) pairs of shoes from the earth's resources, God sees us imitat-

ing his attributes of wisdom, knowledge, skill, strength, creativity, appreciation of beauty, sovereignty, planning for the future, and the use of language to communicate. (Grudem, 2003, p. 27)

Imitation also involves resting on the Sabbath (Exodus 20:8-11). Such imitation extends to our relationships with each other (1 John 4:11) and even with strangers (Deuteronomy 10:18-19) and enemies (Exodus 23:4).

Responsibility Toward Unproductive Persons

It can be argued that productivity in the Bible is related to the theme of redemption. The Scriptures recognize that not everyone is productive in society. For example, those who can work but do not are expected to start working since productivity is a community issue not an individual matter alone (Exodus 20:8-11; 23:11; Ruth 2; Ephesians 4:28; 1 Thessalonians 3:11-12). Those who are intentionally unproductive must depend on the goodwill of others in the community. When members of the community encourage the indolent to work, they are acting redemptively not only for the lazy person but also for the good of the community. Likewise when the community helps a willing person to find employment, the community acts redemptively.

Also, those who are unable to work because of illness depend on the community to assist them in getting well if this is possible. Jesus healed many people who were unproductive drains on society. True, the healings may have had as their primary focus the expansion of the Kingdom of God, but the economic dimension to the healings should not be overlooked (as is frequently done by Bible scholars). For example, at Capernaum alone Jesus healed many people (Matthew 8:16; Mark 1:29-34; Luke 4:23, 40). If we include the economic dimension as one of the results of the healings, the redemptive nature of the healing is much broader than spiritual and physical transformations that were taking place.

Another way redemption is experienced is when those in a community gladly give their productivity in place of those who cannot work because of age, infirmity, illness, or condition. This is redemption through substitution by which the community, in essence, says to the unproductive member of society, "We are here for you. We substitute our labor for yours." Contributing to the needs of the poor is a related responsibility that is designed to bring blessing to the giver as much as to the receiver (Proverbs 22:9; Romans 12:13; 2 Corinthians 9:12-15; 1 Timothy 6:18; Sider, 2005).

The aged are vital members of the community even if they are unable to work as productively as younger people (Job 8:8; 12:12). Their productivity is of a different kind: offering wisdom and counsel to others and advocating on behalf of those who are employed.

SUMMARY & CONCLUSIONS

A theological understanding of the firm and its operational processes must first of all and by definition be about our relationship with God. The question is whether our theological understanding of God and his plan for relationships on earth provides an authentic model to imitate in the world of business efficiency.

When evaluating the modern concept of operational efficiency through the lens of Scripture, we can note the following. The Bible offers few direct commands to strive for efficiency; however, there are numerous passages throughout the Bible that directly and indirectly support the concept. Some ancient Hebrew prophets spoke openly about national leaders who took advantage of people for personal gain; however, even in the most virulent prophetic attacks, the prophets do not warn against or forbid an emphasis on productive work *per se*.

Efficiency in labor is a covenant community issue not just an individual issue. All work is performed ultimately for the benefit of the larger community and before God. Resources that are used in labor are ultimately community resources and must be guarded (static efficiency). This includes the persons who perform the work in society, i.e., as humans, they must be cared for as well as the needs of the organization. Business relationships are communal by nature. What one business does results in an impact on others in the community: employees, customers, and suppliers. Unless businesses watch out for the interests of others, the whole community can be at risk of loss. Efficient production is one valid means of looking out for the interests of the larger community. The covenant blessings of shalom are gifts from God but mediated through taking responsibility for human effort. Part of this responsibility is watching out for the use of resources and working toward productive output.

Biblical teaching on the topic represents both possible convergence with and possible divergence from contemporary business practice. There is convergence in that productivity is encouraged. Effective performance improvement efforts are fact-based efforts to get to the truth of a process. The possible divergence is that produc-

tivity seen through the lens of Scripture is not considered separate from the fundamental spiritual dimension of life. It is part of a much larger concern for how an abundant life, all of its dimensions, can be sustained in the context of covenant relationships in a community.

Striving for productivity appears to be in full agreement with the Bible and should be encouraged. It can be seen as a measure of the degree to which an organization and its community are flourishing. However, striving for efficiency in a manner that breaches other covenant principles is contradicted by the Bible and should be avoided. Suggesting that Scripture provides theological support for working as efficiently as possible by no means places efficiency on a pinnacle of perfection. In fact it can be argued that the emphasis of Scripture on this concept maintains the centrality of principles of covenantal living. This is in stark contrast to unrestrained, and quite narrow, focus on efficiency by itself that has been criticized by some.

Humans were created for productive work. Through both ruling and serving the earth humans and earth work together as a unified whole to enhance the earth's goodness and thereby bring glory to the Creator. Productivity in work is not an end in itself but a means of serving the sustenance needs of others. What fosters community and interdependence is good. What cares for the earth's sustained ability to be productive is good. What undermines these is bad. Exercising dominion over nature must constantly be held in tension with the exercise of humility and service to nature. If it were not for what God has done and continually does on the earth, human efforts for productivity would be futile. Ultimately, it is God who provides the ongoing context for efficiency to be established. All business technology belongs to God. This includes technology of machines and work processes but also management technology. This means that whatever technology is used to enhance efficiency is technology in which God has an interest. It also means that such technology should be treated with reverence, setting it apart for a holy purpose. In other words, the use of business technology is to be infused with the essence of the covenantal relationship with God.

Wisdom and prudence are solid biblical concepts that are, first of all, theologically based and second, pragmatic. Those who have insight and understanding regarding how to go about the business of life are valuable members of the community. They contribute to the well-being of all. Efficiency is one of those aspects of the human experience that has an important instrumental and indispensable role of being prudent. This does not mean that the drive toward efficiency is of necessity the highest of human

virtues, that it should take on the qualities of a religious faith, or that it is by nature an entire worldview. This would be contrary to the core principles at stake in covenantal living.

When leaders evaluate the productivity of the organization they can ask of themselves and their managers several questions: What has God done to give us the gift of efficiency? Have we fulfilled our obligations to the community at work as well as to abundant living (in all its dimensions) for the larger community while we have pushed for excellence in productivity? Have we acted faithfully to the commitments we have made while achieving efficiency? If productivity is less than desired, did we fulfill our stewardship responsibilities effectively? Are our productivity goals reasonable given how we want to treat our people?

In practice the Christian manager will, at times, face a three-way tension. First, the manager is responsible for achieving productivity goals of the organization or of a particular work unit. This means following the typical pathways of gathering data, understanding work processes and continuously making improvements. Second, the manager may see the need to advocate on behalf of his employees, restraining productivity efforts to achieve broader community values. This will not always be easy and will likely require the manager to spend corporate political capital. Third, the manager will find that some subordinates who desire an easier work life and for selfish reasons seek to constrain productivity either passively or actively and the manager will listen to employees but may in the end hold firm on the organization's performance standards, make adjustments in work processes that result in both performance improvements as well as employee satisfaction, or recommend changes to the technology, where appropriate, so that unsavory impacts of work processes on workers are minimized. At other times, the manager may need to be both the ears and mouth of the organization — listening to the concerns of suppliers, employees, or customers and leading a conversation about what these stakeholders want to accomplish at the same time as helping stakeholders understand the performance standards.

REFERENCES

- Adeney, W. F. (1988a). Blessed. In J. Hastings (Ed.). *A dictionary of the Bible*. (Vol. 1) (p. 306). Peabody, MA: Hendrickson.
- Adeney, W. F. (1988b). Blessing. In J. Hastings (Ed.). *A dictionary of the Bible*. (Vol. 1) (p. 307). Peabody, MA: Hendrickson.

- Alexander, J. K. (2008). *The mantra of efficiency: From waterwheel to social control*. Baltimore, MD: The Johns Hopkins University Press.
- Allen, J. L. (1984). *Love and conflict: A covenantal model of Christian ethics*. Nashville, TN: Abingdon Press.
- Aquinas, T. (1947). Question 47. Of prudence, considered in itself. *Summa Theologica: First complete American edition in three volumes* (Vol. 2) (pp. 1389-1412). New York, NY: Benziger Brothers, Inc.
- Banks, R. J. (1994). *God the worker: Journeys into the mind, heart and imagination of God*. Philadelphia, PA: Judson Press.
- Bannock, G., Baxter, R. E., & Davis, E. (2003). *Dictionary of economics* (4th ed.). Princeton, NJ: Bloomberg Press.
- Bedeian, A. G., & Wren, D. A. (2001). Most influential management books of the 20th century. *Organizational Dynamics*, 29(3), 221-225.
- Berkovitz, E. (1969) Emeth, the concept of truth. *Man and God: Studies in biblical theology* (pp. 253-291). Detroit, MI: Wayne State University Press.
- Besanko, D., Dranove, D., Shanley, M., & Schaefer, S. (2007). *Economics of strategy* (4th ed.). Hoboken, NJ: John Wiley & Sons.
- Boersema, J. M. (2005). The use of Scripture in the integration of faith in business. Paper presented to the Christian Business Faculty Association Annual Conference. San Diego, CA.
- Brown, W. P. (2001). Whatever your hand finds to do: Qoheleth's work ethic. *Interpretation*, 55(3), 271-284.
- Brueggemann, W. (2001). *Peace*. St. Louis, MO: Chalice Press.
- Brueggemann, W. (2002). Covenant. Community. *Reverberations of faith: A theological handbook of Old Testament themes* (pp. 35-40). Louisville, KY: Westminster John Knox Press.
- Butkus, R. A. (2001). The stewardship of creation. In R. B. Kruschwitz (Ed.). *Moral landscape of creation* (pp. 17-23). Waco, TX: Baylor University Press.
- Calvez, J. Y., & Naughton, M. J. (2002). Catholic social teaching and the purpose of the business organization. In S. A. Cortright & M. J. Naughton (Eds.). *Rethinking the purpose of business: Interdisciplinary essays from the Catholic social tradition* (pp. 3-19). Notre Dame, IN: University of Notre Dame Press.
- Chewning, R. C., Eby, J. W., & Roels, S. J. (1990). *Business through the eyes of faith*. San Francisco, CA: HarperSanFrancisco.
- Clark, C. M. A. (2002). Competing visions: Equity and efficiency in the firm. In S. A. Cortright & M. J. Naughton (Eds.). *Rethinking the purpose of business: Interdisciplinary essays from the Catholic social tradition* (pp. 81-101). Notre Dame, IN: University of Notre Dame Press.
- Collins, C. J. (2009). Proverbs and the levitical system. *Presbyterion*, 35(1), 9-34.
- Conrad, E. W. (1993). Vine and vineyard. In B. M. Metzger & M. d. Coogan (Eds.). *The Oxford Companion to the Bible* (pp. 788-789). New York: Oxford University Press.
- Couto, A., & Graham, D. J. (2009). Determinants of efficiency and productivity in European railways. *Applied Economics*, 41(22), 2827-2851.
- Daft, R. L. (2008). *Management* (8th ed.). Mason, OH: Thomson South-Western.
- Davidson, J. A. (2008). *Toward a theology of beauty*. Lanham, MD: University Press of America, Inc.
- Davis, E. F. (2009). *Scripture, culture, and agriculture: An agrarian reading of the Bible*. New York, NY: Cambridge University Press.
- deSilva, D. A. (2001). *New Testament themes*. St. Louis, MO: Chalice Press.
- Donaldson, T., Werhane, P. H., & Cording, M. (2002). *Ethical issues in business: A philosophical approach* (7th ed.). Upper Saddle River, NJ: Prentice Hall.
- Doukhan, J. B. (1993). *Hebrew for theologians: A textbook for the study of biblical Hebrew in relation to Hebrew thinking*. Lanham, MD: University Press of America.
- Drucker, P. F. (1954). *The practice of management*. New York, NY: Harper & Row.
- Drucker, P. F. (1974). *Management: Tasks, responsibilities, practices*. New York, NY: HarperBusiness.
- Dumbrell, W. J. (1984). *Covenant and creation: A theology of the Old Testament covenants*. Grand Rapids, MI: Baker Book House.
- Dyer, G. (2004). Redistributive land reform: No April rose. The poverty of Berry and Cline and GKI on the inverse relationship. *Journal of Agrarian Change*, 4(1/2), 45-72.
- Dyrness, W. (1977). Wisdom. *Themes in Old Testament theology* (pp. 189-199). Downers Grove, IL: InterVarsity Press.
- Eakin Jr., F. E. (1977). Wisdom, creation and covenant. *Perspectives in Religious Studies*, 4(3), 218-232.

- Farrell, M. J. (1957). The measurement of productive efficiency. *Journal of the Royal Statistical Society*, 129(3), 253-290.
- Foldvary, F. E. (1998). Efficiency. *Dictionary of free-market economics* (p. 124). Northampton, MA: Edward Elgar.
- Fox, M. V. (1968). Aspects of the religion of the book of Proverbs. *Hebrew Union College Annual*, 39, 55-69.
- Freeman, M. (1996). Scientific Management: 100 years old; poised for the next century. *SAM Advanced Management Journal*, 61(2), 35-41.
- Fretheim, T. E. (2005). Wisdom and creation. *God and world in the Old Testament: A relational theology of creation* (pp. 199-204). Nashville, TN: Abingdon Press.
- Geisler, N. L. (1989). *Christian ethics: Options and issues*. Grand Rapids, MI: Baker Book House.
- Goldingay, J. (2006). *Old Testament theology: Israel's faith*. Downers Grove, IL: InterVarsity Press.
- Goldratt, E. M., & Cox, J. (1992). *The goal: A process of ongoing improvement* (2nd ed.). Great Barrington, MA: North River Press, Inc.
- Goodchild, P. (2009). *Theology of money*. Durham, NC: Duke University Press.
- Gordon, B. J. (1989). *The economic problem in biblical and patristic thought*. New York, NY: E. J. Brill.
- Gorringer, T. (2010). Idolatry and redemption: economics in biblical perspective. *Political Theology*, 11(3), 367-382.
- Grant, J. A. (2003). Wisdom and covenant: Revisiting Zimmerli. *European Journal of Theology*, 12(2), 103-113.
- Griffiths, B. (1984). *The creation of wealth: A Christian's case for capitalism*. Downers Grove, IL: InterVarsity Press.
- Grudem, W. (2003). *Business for the glory of God: The Bible's teaching on the moral goodness of business*. Wheaton, IL: Crossway Books.
- Hafemann, S. J., & House, P. R. (2007). *Central themes in biblical theology: Mapping unity in diversity*. Grand Rapids, MI: Baker Academic.
- Harper, I. R., & Gregg, S. (2008). *Christian theology and market economics*. Northampton, MA: Edward Elgar.
- Hasel, G. (1972). The center of the OT and the OT theology. *Old Testament theology: Basic issues in the current debate* (pp. 49-63). Grand Rapids, MI: William B. Eerdmans Publishing.
- Herman, S. W. (1997). *Durable goods: A covenantal ethic for management and employees*. Notre Dame, IN: University of Notre Dame Press.
- Heyne, P. (1993). Efficiency. In D. R. Henderson (Ed.). *The Fortune encyclopedia of economics* (pp. 9-11). New York, NY: Warner Books.
- Hiebert, T. (2001). Eden: Moral power of a biblical landscape. In R. B. Kruschwitz (Ed.). *Moral landscape of creation* (pp. 9-16). Waco, TX: Baylor University Press.
- Holloman, H. W. (2005). Prudence. *Kregel dictionary of the Bible and theology* (p. 433). Grand Rapids, MI: Kregel Academic & Professional.
- Hsu, P. F., & Sun, M. H. (2005). Using the theory of constraints to improve the identification and solution of managerial problems. *International Journal of Management*, 22(3), 415-425.
- Hubbard, D. A. (1966). The wisdom movement and Israel's covenant faith. *Tyndale Bulletin*, 17, 3-33.
- Jensen, D. H. (2006). *Responsive labor: A theology of work*. Louisville, KY: Westminster John Knox Press.
- Johnston, D., & Le Roux, H. (2007). Leaving the household out of family labor? The implications for the size-efficiency debate. *The European Journal of Development Research*, 19(3), 355-371.
- Kaiser, E. G. (1966). *Theology of work*. Westminster, MD: The Newman Press.
- Kendrick, J. W. (1994). Productivity. In D. Greenwald (Ed.). *The McGraw-Hill encyclopedia of economics* (2nd Ed.) (pp. 814-819). New York: McGraw Hill, Inc.
- Kiuchi, N. (2007). Leviticus. In D. W. Baker & G. J. Wenham (Eds.). *Apollos Old Testament commentary* (Vol. 3). Downers Grove, IL: Intervarsity Press.
- Kooy, V. H. (1962). Discretion and prudence. In G. A. Buttrick (Ed.). *The interpreter's dictionary of the Bible*. (Vol. 1) (p. 847). Nashville, TN: Abingdon Press.
- Koslowski, P. (2002). The shareholder value principle and the purpose of the firm. In S. A. Corright & M. J. Naughton (Eds.). *Rethinking the purpose of business: Interdisciplinary essays from the Catholic social tradition* (pp. 102-127). Notre Dame, IN: University of Notre Dame Press.
- Larive, A. (2004). *After Sunday: A theology of work*. New York, NY: Continuum.
- LaRondelle, H. K. (2005). *Our Creator Redeemer: An introduction to biblical covenant theology*. Berrien Springs, MI: Andrews University Press.

- Layton, S. C. (1990). The steward in ancient Israel: A study of Hebrew (Aser) Al-Habbayit in its Near Eastern setting. *Journal of Biblical Literature*, 109(4), 633-649.
- Lee, J. (2011). *The two pillars of the market: A paradigm for dialogue between theology and economics*. Oxford: Peter Lang.
- Lindberg, C. A. (1999). Efficiency. Productivity. *The Oxford American thesaurus of current English* (pp. 218, 590). New York: Oxford University Press.
- Mackie, G. M. (1988). Barrenness. In, J. Hastings (Ed.). *A dictionary of the Bible* (Vol. 1) (p. 248). Peabody, MA: Hendrickson.
- Matthews, v. H. (1988). *Manners and customs in the Bible*. (Rev. Ed.). Peabody, MA: Hendrickson Publishers.
- McCann, D. P. (1997). On moral business: A theological perspective. *Review of Business*, 19(1), 9-14.
- McIver, R. K. (1994). One hundred-fold yield – miraculous or mundane? Matthew 13:8, 23; Mark 4:8, 20; Luke 8:8. *New Testament Studies*, 40(4), 606-608.
- McKee, A. F. (1993). Christian thought and microeconomic theory. *International Journal of Social Economics*, 20(2), 51-64.
- Meeks, M. D. (1989). *God the economist: The doctrine of God and political economy*. Minneapolis, MN: Fortress Press.
- Miller, D. E. (1979). The biblical basis for ecology. *Brethren Life and Thought*, 14, 12-17.
- Müller, H. P. (1980). Chakham. In G. J. Botterweick, & H. Ringgren (Eds.). *Theological dictionary of the Old Testament* (Vol. IV) (pp. 370-385). Grand Rapids, MI: William B. Eerdmans Publishing Company.
- Neal, A., & Hesketh, B. (2001). Productivity in organizations. In N. Anderson, D. S. Ones, H. K. Sinangil, & C. Viswesvaran (Eds.). *Handbook of industrial, work and organizational psychology* (Vol. 2) (pp. 7-24). Thousand Oaks, CA: Sage Publications.
- Nelson, R. H. (2001). *Economics as religion: From Samuelson to Chicago and beyond*. University Park, PA: Penn State Press.
- Nelson, R. H. (2005). The theology of economics. In J. W. Henderson, & J. L. Pisciotta (Eds.). *Faithful economics: the moral worlds of a neutral science* (pp. 89-107). Waco, TX: Baylor University Press.
- Novak, M. (1982). *The spirit of democratic capitalism*. New York, NY: Simon & Schuster.
- Oslington, P. (2000). A theological economics. *International Journal of Social Economics*, 27(1), 32-44.
- Oxford declaration on Christian faith and economics. (1990). *Transformation*, 7(2) 1-9.
- Packer, J. I. (1990). The Christian's purpose in business. In R. C. Chewning (Ed.). *Biblical principles & business: The practice* (pp. 16-25). Colorado Springs, CO: NavPress.
- Pava, M. L. (2001). The many paths to covenantal leadership: Traditional resources for contemporary business. *Journal of Business Ethics*, 29(1/2), 85-93.
- Pearce, D. W. (1992). *The MIT dictionary of modern economics*. Cambridge, MA: The MIT Press.
- Perdue, L. G. (1994). *Wisdom and creation: The theology of wisdom literature*. Nashville, TN: Abingdon Press.
- Pindyck, R. S., & Rubinfeld, D. L. (2001). *Microeconomics* (5th ed.). Upper Saddle River, NJ: Prentice Hall.
- Putterman, L. (1990). *Division of labor and welfare: An introduction to economic systems*. New York, NY: Oxford University Press.
- Rempel, H. (2003). *A high price for abundant living: The story of capitalism*. Scottsdale, PA: Herald Press.
- Richards, R. R. (2002). *God and business: Christianity's case for capitalism*. Fairfax, VA: Xulon Press.
- Ringgren, H. (1977). Byn. In G. J. Botterweick & H. Ringgren (Eds.). *Theological dictionary of the Old Testament* (Vol. 2) (pp. 99-107). Grand Rapids, MI: William B. Eerdmans Publishing Company.
- Robbins, S. P., & Coulter, M. (2009). *Management* (10th ed.). Upper Saddle River, NJ: Prentice Hall.
- Robertson, O. P. (1980). *The Christ of the covenants*. Grand Rapids, MI: Baker Book House.
- Schneider, J. R. (2002). *The good of affluence: Seeking God in a culture of wealth*. Grand Rapids, MI: William B. Eerdmans Publishing.
- Scott, R. B. Y. (1960). Wisdom in creation: The 'Amon of Proverbs 8:30. *Vetus testamentum*, 10(2), 213-223.
- Shih-Neng, C. (2006). Productivity changes in Taiwanese hospitals and the national health insurance. *Service Industries Journal*, 26(4), 459-477.
- Sider, R. J. (2005). *Rich Christians in an age of hunger* (new ed.). Nashville, TN: Thomas Nelson Publishers.

- Smith, G., & Wheeler, B. G. (1999, fall). The nature and purpose of work and productivity. *Journal of Biblical Integration in Business*. 127-141.
- Sproul Jr., R. C. (2008). *Biblical economics: A commonsense guide to our daily bread*. White Hall, WV: Tolle Lege Press.
- Stapleford, J. E. (2002). *Bulls, bears & golden calves: Applying Christian ethics in economics*. Downers Grove, IL: InterVarsity Press.
- Stendebach, F. J. (2006). Shalom. In G. J. Botterweck, H. Ringren, & H. J. Fabry (Eds.). *Theological dictionary of the Old Testament* (Vol. 15) (pp. 28-39). Grand Rapids, MI: William B. Eerdmans Publishing Company.
- Stevens, R. P. (2006). *Doing God's business: Meaning and motivation for the marketplace*. Grand Rapids, MI: William B. Eerdmans Publishing Company.
- Volf, M. (1991). *Work in the spirit: Toward a theology of work*. Eugene, OR: Wipf and Stock Publishers.
- von Rad, G. (1962). *Old Testament theology: The theology of Israel's historical traditions* (Vol. 1). New York, NY: Harper & Row, Publishers.
- von Rad, G. (1972). *Wisdom in Israel*. Harrisburg, PA: Trinity Press International.
- Waltke, B. K. (2007a). The gift of wisdom. *An Old Testament theology* (pp. 897-969). Grand Rapids, MI: Zondervan.
- Waltke, B. K. (2007b). *An Old Testament theology: An exegetical, canonical, and thematic approach*. Grand Rapids, MI: Zondervan.
- Waltke, B. K. (2008). Righteousness in Proverbs. *Westminster Theological Journal*, 70(2), 225-237.
- Wheeler, S. E. (1995). *Wealth as peril and obligations*. Grand Rapids, MI: William B. Eerdmans Publishing.
- Yang, C. H., & Chen, K. H. (2009). Are small firms less efficient? *Small Business Economics*, 32(1), 375-395.
- Zimdahl, R. L. (2006). *Agriculture's ethical horizon*. Boston, MA: Elsevier.

ABOUT THE AUTHOR



Michael Cafferky is professor of business and management at Southern Adventist University. He is the author of the textbook *Management: A Faith-based Perspective* (Pearson Education, Inc., 2012). In 2011, Michael received Southern Adventist University's annual President's Award for Excellence in Scholarship. Prior to his career in higher education Michael served for twenty years in health-care administration and four years as a pastor. He can be contacted at mcafferky@southern.edu.