A Conceptual Model of the Effects of Taxation, Exchange Rate, and Regulations on the Transfer Pricing Behavior of Multinational Firm Managers

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We review a sample of transfer pricing literature and conceptualize a moderated mediation model of the transfer pricing behavior of managers of multinational firms (MNFs). Our conceptual model suggests that transfer pricing decisions present complex problems to MNF managers that involve interactions between many factors, which could have many consequences, some of which may be at odds with each other. We provide relevant information to managers of MNFs and the regulatory agencies that will assist them in continuing the search for a regulatory and compliance frame work that works in the mutual interest of all relevant stakeholders.

1. Introduction

The global market economy today is characterized by complex large enterprises and multinational firms (MNFs) with diverse production assortment, market dispersion and decentralized organizational structures and management control systems characterized by intra-firm pricing decisions, exchanges of goods and services, and transfer of capital and investments among affiliates across international borders. In this regard, studies have argued that managers of MNFs manipulate these intrafirm transactions to shift their wealth to countries with lower tax burdens or to countries with more stable currency values or to countries where regulations are relaxed. We review a sample of related transfer pricing literature based on these arguments and conceptualize a moderated mediation model of the transfer pricing behavior of managers of MNFs. Our conceptual model suggests that transfer pricing decisions present complex problems to MNF managers that involve interactions between many factors, which could have many consequences, some of which may be at odds with each other.

From a research and tax administration standpoint, transfer pricing refers to prices that companies charge for goods, services, tangible and intangible assets they trade with subsidiaries and similar controlled entities in foreign markets. Research continues to suggest that the demands made on a company's transfer pricing system generally relate to improving the after-tax profitability of the worldwide organization and the effective and efficient movement of resources among subsidiaries. Specifically, the after-tax profitability of the global organization may be enhanced by the recognition of earnings in the most favorable tax jurisdiction. Also, transfer prices may be employed in reducing the
risks associated with economic and/or governmentally imposed adversities based on trade regulations, diverse exchange rates and the imposition of duties on products being transferred. Finally, the requirement for funds by subsidiaries in particular countries may be satisfied in part through proper intercompany pricing.

We suggest a conceptual model that suggests an interaction between tax rate differences, exchange rate risk, regulatory changes, and performance measurement, and make propositions regarding how these interactions affect the transfer pricing behaviors of managers of MNFs. Notably, multinational transfer pricing decisions, the focus of this paper, are more sophisticated than within a purely domestic situation because of factors such as the volatility of exchange rates, differences between countries’ interest rates, political risks, and the effects of international regulatory uncertainties and taxation systems.

This study is motivated in part by prior research studies and regulatory agency reports that have continued to document evidence that MNFs strategically set transfer prices, structure internal debt, and develop cost-sharing agreements between affiliates so that affiliates in high tax jurisdictions recognize a disproportionate amount of expenses, while affiliates in low tax jurisdictions recognize disproportionate amount of income (Altshuler and Grubert 2006; Dharmapala and Riedel, 2013, Drucker, 2010; GAO 2008; Gravel 2010; Gupta and Mills, 2002 and Martin, 2013). The consistent argument against these strategies is that they all minimize corporate income tax payments to the disadvantage of the high tax countries. In recent times, local and international tax authorities have continued to increase the number of inquiries and tax audits of major multinational corporations as a result of this (Ernst and Young, 2014). At the heart of majority of these inquiries and audit procedures is the likelihood that these corporations are using their transfer pricing decisions to shift wealth to low tax jurisdictions or what has been called tax havens.

Secondly, research shows that managers of MNFs have a need to adequately manage the exchange rate risk exposure associated with the transfer of value across international borders. Foreign exchange exposure is a measure of the potential for a firm’s profitability, net cash flow, and market value to change because of a change in exchange rates. The breakdown of the Bretton Woods system and the end of the U.S. dollar peg to gold in 1973 increased the need for currency risk management (Papaioannou, 2001). Rangan (1998) as in Kogut (2002) showed in a careful study of production shifting that MNFs’ exporting patterns are sensitive to exchange rate fluctuations. This is also evident from the spate of production shifting by US MNFs to China and other emerging economies. Kogut and Chang (1996) provide evidence that foreign entry in the United States responds to exchange rate movements. Also, Hegji (2003) argues that variations in exchange rate between countries should be completely reflected by changes in prices in the two countries if the “law of one price” holds. The effect on a firm when foreign exchange rates change can be measured in several ways. Transaction exposure measures changes in the value of outstanding financial obligations incurred prior to a change in exchange rates but not due to be settled until after the exchange rates change. Operating exposure, also called economic exposure, competitive exposure, or strategic exposure, measures the change in the present value of the firm resulting from any change in future operating cash flows of the firm caused by an unexpected change in exchange rates. Accounting exposure, also called translation exposure, is the potential for accounting-derived changes in owner’s equity to occur because of the need to “translate” foreign currency financial statements of foreign subsidiaries into a single reporting currency to prepare worldwide consolidated financial statements. With the very erratic exchange rate regimes of today, managers of MNFs are faced
often with a daunting task resulting from the complexities involved in measuring accurately current risk exposures and deciding on the appropriate degree of risk exposure that ought to be covered. Although managers of MNFs have many tools and options available to mitigate these risks, the availability and timing of the mitigating tools is expected to be a consideration when making transfer pricing decision.

Thirdly, prior research has argued that the most serious problems for MNFs arise from the substitution of foreign production for exports of goods from the home countries, and the negative impacts on the balance of trade of home countries (Itagaki, 1982). Hence, countries are now coming up with more regulations to avoid being on the losing end of this rat race.

Contrary to the thesis of most research studies in this area, the performance measurement value of transfer pricing and the associated intra-firm conflict it generates, adds an additional layer of complexity to the MNFs managers decision on the optimal transfer price (Ernst and Young, 2014; Hegji, 2003). As a result, transfer pricing decisions have continued to be among the riskiest areas for managers of multinational corporations from both a compliance and tax planning perspective.

There are several papers in the research literature that have sought to incorporate exchange rate and taxation risk into the international transfer-pricing model, and some other papers that provide models that incorporate regulatory and taxation risks. However, most of these research papers do not consider the direct behavioral implications for managers of MNFs of the joint effects of the volatility in exchange rates, the prevalence of tax rate differences, increases in international regulations and monitoring, and the ever present MNF managers need to perform. Further, none of the prior papers reviewed in this study provide a successful integration of all the variables that affect multinational firms transfer pricing decision processes. Although we do not make an attempt to do this in this paper, the integration of all the relevant variables in an empirical study presents an opportunity for future research.

The thesis of this study is informed by prior studies that argue that MNFs manipulate their transfer prices to shift their wealth to countries with lower tax burdens and studies that argue that when exchange rates fluctuate, MNFs tend to manipulate transfer prices to shift their wealth to countries with more stable currency values or to countries where expected future currency values will be higher. This study provides an extension of these arguments by considering regulatory challenges as a mediator and exchange risk management as a moderator of the income tax effect. This study will make additional contributions to the study of MNFs by considering the effect of non-tax factors such as performance measurement and other similar control measures on the transfer pricing decisions of managers of MNFs. We review related research papers and build on existing theoretical frameworks to provide managers and regulators additional evidence on the interaction between the various motivating factors in the transfer pricing decision model. Furthermore, this paper provides relevant information to managers of MNFs and the regulatory agencies that will assist them in continuing their search for a regulatory and compliance framework that works in the mutual interest of all interested parties.

The remainder of our paper is as follows. Section 2 presents a theoretical overview of the multinational and transfer pricing and taxation decision processes. In section 3, we develop our simplified conceptual model and propositions. We provide a concluding summary in section 4.
2. Theoretical Overview

2.1 MNFs and Transfer Pricing

The market economy today is characterized by complex MNFs and large enterprises with diverse production assortment, market dispersion and decentralized organizational structures and management. According to Kogut (2002), MNFs are viewed as global network of subsidiaries that have the opportunity to exploit the flexibility in their international operations for overall firm profit maximization. Kogut also noted that establishing such complex structures includes fragmentation of resources and capabilities of enterprises, and the transferring of competences and responsibilities for their allocation to cost, profit and investment centers.

Although MNFs subsidiaries are relatively independent units with their own goals, recognized external market of goods and production factors, and their own profit responsibility, they are not always independent of the other organizational parts of the MNFs. There is a continuous transfer of both tangible and intangible assets among members of a decentralized organization. Kogut and Kulatilaka (1995) distinguished between “within-country” and “across-country” options of inter-firm transfer of goods and services. It is the complexity of the “across-country” option that has generated a lot of debate and interest from governments, MNFs, and academic researchers alike. According to Rugman (2003), the world's largest 500 MNFs account for 90% of the world's stock of foreign direct investment (FDI) and half of world trade. Of these 500 MNFs, 90% are from the ‘triad’ of the EU, North America and Japan. This intra-firm transfer of goods and services entails that departments charge one another for the transferred goods and services. Miesel et al. (2000) characterizes transfer pricing as a classic source of conflict within decentralized organizations. They observe that chief financial officers and corporate controllers are constantly mediating on disputes between members of the decentralized organization over transfer pricing related to resource costs and productivity analyses, make-or-buy decisions, performance incentives, division contribution measurement, and overall tax burden.

Most academic studies consider transfer pricing as a device for coordinating the plans and actions of individual decision makers in decentralized organizations (see Grabski (1985) and Abdel-khalik and Lusk (1974) for earlier surveys covering these lines of research). The foregoing discussion implies that “transfer pricing” is one of the most important elements of efficient management of a decentralized enterprise.

2.2 The Effect of Exchange Rate Variation

Abdallah (1987) argues that with the fluctuation in foreign exchange rates, transfer-pricing policies will lead to presenting misleading and imperfect financial measures of performance. Achieving motivation, goal congruence and autonomy of foreign subsidiaries and their managers are always leading to conflicting results with performance evaluation, reduction of income taxes, reduction of tariffs and avoidance of foreign exchange risks. This conflict of MNFs’ objectives, created by exchange rate variations, provides the additional motivation in support of this study. Consistent with our argument, Abdallah (1987) postulates that whenever international transfer pricing objectives lead to conflicting consequences, MNFs are forced to trade-off between achieving these different objectives and must accept less global profits when one objective has a priority over others especially for achieving long run
objectives and complying with regulatory requirements. Therefore, MNFs choose their transfer pricing methods in connection with international tax rates and regulations (Dawson and Miller, 2000), and in consideration of exchange rate risks (Olivei, 2002; and Hung, 1997).

Additional evidence in this regard has been reviewed in other related studies. Rangan (1998) as in Kogut (2002) showed in a careful study of production shifting that MNFs’ exporting patterns are sensitive to exchange rate fluctuations. Intuition suggests that MNFs tend to shift production to countries with more stable currency values in an effort to maximize global profits. This is evident from the recent spate of production shifting by US MNFs to China and other emerging economies. Kogut and Chang (1996) provide evidence that foreign entry in the United States responds to exchange rate movements. Also, Hegji (2003) argue that variations in exchange rate between countries should be completely reflected by changes in prices in the two countries if the “law of one price” holds. He also noted that if home country export prices are fixed, when its currency depreciates prices will decrease in foreign currency terms. This suggests a unitary exchange rate pass-through. Exchange rate pass-through denotes the impact of a change in the exchange rate between exporting and importing countries on local-currency prices of import.” (Olivei, 2002). However, this study is not necessarily about interest rate pass-through. As also observed by Hegji (2003), this has not been evident in empirical research. What has been recorded in the literature is an incomplete exchange rate pass-through as demonstrated by related studies (Baldwin, 1988; Dixit, 1989; Kasa, 1992; and Betts and Devereaux, 1996). While these studies provide additional support for this study, they do not provide the type of illustrative model that this study provides. Consistent with this argument, this study contends that, when exchange rates vary, managers of MNFs tend to manipulate transfer prices to shift their wealth to countries with more stable currency values. The denomination decision for international transactions is receiving a great deal of attention by management of MNFs following the recent spate of governmental interventions in the form of tax laws and prosecution of firms in violation of the transfer pricing rules (Ernst and Young, 2014; Hegji, 2003; Miesel et al. 2002) and the additional risk imposed by unstable exchange rates (Hung, 1997). Multinational transfer pricing methods are guided by tax regulations that require prices on international transactions to be set at “arm’s-length” and confounded by the variations in exchange rates between countries.

2.3 Regulatory and Taxation Issues in Transfer Pricing

According to the tax laws in the United States, Canada, and other member countries of the Organization for Economic Co-operation and Development (OECD), the proper transfer price is one which two parties dealing at arm's length would agree to for a certain transaction. Consequently, the resulting price is called an "arm's length price", and the principle used to determine such a price is an "arm's length principle". The arm's length principle is a cornerstone of transfer pricing methodologies used by tax administrators in the majority of countries in the world. In a more formal way, the "arm's length principle" is based on Article 9 of the OECD Model Tax Convention which states that where conditions are made or imposed between the two enterprises in their commercial or financial relations which differ from those which would be made between independent enterprises, then any profits which would, but for those conditions, have accrued to one of the enterprises, but, by reason of those conditions, have not so accrued, may be included in the profits of that enterprise and taxed accordingly.

According to Gravelle (2010), the US federal government loses between $10 billion to $60 billion per year of corporate income tax revenue as a result of the MNFs shifting profits and income into low-tax
countries, often referred to as tax havens. Similarly, the Government Accountability Office (GAO) in a recent report shows that over 18,500 firms list their business address at a single location in the Cayman Islands (GAO, 2008). These practices which could be either legal (tax avoidance) or illegal (tax evasion) have led to the recent move by the Organization for Economic Cooperation and Development (OECD) and the G-20 industrialized nations targeting tax haven countries. The US has also made a number of legislative proposals that address international tax evasion and avoidance issues, including the American Jobs and Closing Loopholes Act (H.R. 4213) passed by the House on May 28, 2010; the Stop Tax Haven Abuse Act (S. 506, H.R. 1265); draft proposals by the Senate Finance Committee; the Bipartisan Tax Fairness and Simplification Act (S. 3018); and recent proposals by President Obama. Contrary to the concerns expressed by policy makers, a recent article in CFO Magazine entitled “Taxed to the Max” shows that many managers and shareholders of U.S. firms view the U.S. tax system as more burdensome than the tax systems of other industrialized countries. This argument is primarily driven by the fact that U.S. corporate tax law requires U.S. firms to pay taxes on worldwide income, and the fact that the United States has a relatively high statutory tax rate.

To put it simply, the idea is to force the related companies to sell their goods, services, tangible and intangible assets to one another at market prices for tax purposes. In the past several years the Internal Revenue Service (IRS), the Canadian Customs and Revenue Agency (CCRA), among other OECD countries, have increased their emphasis on transfer pricing examinations and tax audit of MNFs. Furthermore, the new legislation imposed penalties for a failure to produce documentary evidence supporting the determination of the proper transfer price (Subsection 247(3) of the Income Tax Act (Act) and Part 7 of Information Circular 87-2R). As a consequence, even smaller companies have become concerned about the potential of a transfer-pricing audit. Other countries of the OECD have since adopted similar regulations. Furthermore, most research studies of MNFs and transfer pricing in the United States identify tax incentive as the most important consideration in transfer pricing decisions of MNFs (Ernst & Young 2005a; Choe & Hyde, 2004; Jacob 1996 and Harris, 1993).

Most worrisome is the fact that internationally accepted transfer pricing methods of MNFs under this regulatory regimes are in conflict with strategic transfer pricing for overall profit maximization and tax benefits. Therefore, MNF corporate financial officers and accountants must help in reducing the risk of transfer pricing tax audits of either the Internal Revenue Service or host countries' tax authorities. As MNFs manage their cross border global business transactions, traditional transfer pricing strategies for certain transactions may be more difficult to apply to reduce their worldwide tax liabilities and globally integrate their production and marketing strategies in an uncertain exchange rate regime. Analytical research has proposed different transfer pricing methods for different information circumstances in a firm. Despite the OECD requirement that transaction between related economic entities be consumated under the arm’s-length rule, and the complex regulatory uncertainties across countries in international transfer pricing, little empirical evidence exists that identifies when a particular scheme performs better than others in practice.

Although these tensions between the regulatory authorities and MNFs have informed a lot of the research on taxation of MNFs and their foreign affiliates (see for example, GAO 2008, Altshuler and Grubert (2006)), little is understood about how tax havens affect the exchange rate management and tax planning decisions of MNFs within the framework of multinational transfer pricing. Further, research has not considered fully the behavioral and non-tax factors affecting the MNFs decisions and whether there is
really an overall benefit to the MNFs for these decisions. For example, a GAO report (2008) shows that the foreign operations of U.S. firms located in low-tax jurisdictions have low effective tax rates. However, the study does not investigate whether these low foreign tax rates translate into low effective tax rates for the parent. There is also a gap in the literature regarding the effect of other non-tax factors that may either mediate or moderate these relationships.

The implication of the ongoing discussion is that MNFs weigh the consequences of the tax benefits of shifting wealth to lower tax nation against the erosion in value of wealth transferred to low currency value countries. Under centralized decision-making, the Multinationals adjust transfer prices to either the highest or lowest allowable transfer price, i.e. the arms-length price, which is an exogenous constraint that is imposed by the tax authorities to curtail the opportunistic tax incentives in multinational pricing strategies. Most importantly, the multinational is compelled by its profit-maximizing objectives to adopt a firm-wide optimal output level (Horst, 1971; Dawson and Miller, 2000). Horst (1971) assumes a centralized decision-making model of the decentralized multinational. The assumption is that when the arm’s-length constraint is weak and ineffective, MNFs will choose transfer prices that lie outside the fair transfer price range under variable exchange rate regimes.

3. Model Development and Propositions

Economic transfer pricing research is typically based on microeconomic models, particularly from agency theory and game theory (Baldenius, 2000). Although the model we develop here (see figure 1 below) adopts a systematic combination of these model classes, we do not attempt to provide a detailed and comprehensive review of all individual model versions within these classes. The theoretical model presented here is a modification derived from the combined simplified Hirshleifer (1956), Horst (1971), and Hegji (2003) models. However, our proposed model follows the argument we presented in section 2 in support of our propositions:

![Figure 1. Proposed Theoretical Model of Managers Transfer Pricing Behavior under Regulatory Uncertainties – The model linkages represents propositions](image)
Proposition 1 (P1) indicates that there is a relationship between taxation and regulation of international transactions and the transfer pricing behaviors of managers of MNFs. This implies that managers of MNFs in a transfer pricing decision will manipulate the price charged in intra-firm transactions to shift the corporate wealth to regions with more favorable taxation regimes, and that this behavior is affected by the arms-length price, which is an exogenous constraint that is imposed by the tax authorities to curtail the opportunistic tax incentives in multinational pricing strategies.

Proposition 2 (P2) indicates that there is a relationship between exchange risk in international transactions and the transfer pricing behaviors of managers of MNFs. This implies that managers of MNFs in a transfer pricing decision will manipulate the price charged in intra-firm transactions to shift the corporate wealth to regions stable currency values or expected future increase in currency value when exchange rates vary. A practical implication of this model for the U.S. and international trade relationship appears in a recent article by Green (2006). Green (2006) observes that the perceived exaggeration in the value of Chinese exports is probably getting another boost from the phenomenon of transfer pricing. He argues that the expected increase in the value of the Chinese currency is driving the U.S. MNFs to shift their profits to China through transfer pricing. Olivei (2002) provides another explanation for this that states that the foreign firm will decrease (increase) its markup when the dollar depreciates. My second proposition is derived from this wealth shifting argument (see also Harris, 1993 and Jacob 1996).

We also contend in proposition 3 (P3) that this decision process in (P2) will be mediated by regulatory uncertainties, and that the differences in tax rates between the two countries will moderate the decision to shift corporate wealth. Hence we analyze the effect of exchange rate variations on multinational transfer pricing decision under regulatory uncertainty and tax rate differences, which is the main purpose of this paper.

In proposition 4 (P4) we contend that MNF managers’ incentive to engage in wealth shifting as suggested in P1 and P2 is not in isolation of the need for divisional performance. Managers of the various subsidiaries and headquarters must be evaluated based on their divisional performances. This need to perform creates some level of conflict between the managers of the different divisions and has to be considered in the negotiated optimal transfer price.

In proposition 5 (P5) we provide a counter intuitive argument that is contrary to the expectation that MNFs are rational wealth maximizing entities that will do anything to maximize overall after tax profit. We contend that subsidiary managers will tend to adhere to the host country requirements and take a position that will maximize its own profit, especially when there are alternative markets for its products or sources for its required products. This position is consistent with Hegji (2003).

Finally, proposition 6 (P6) assumes that the MNF is risk averse and maximizes utility from net global profits in units of the currency denomination that has the highest value and stability, and provides the highest tax benefit. This global net profit maximization is subject to effective constraints, including those imposed by exchange rate variations and the arm’s length regulation (P1, P2, and P3). However, the need for subsidiary managers performance moderates these relationships, thus, the global consolidated performance will not result in any extra net benefit to the MNF.
4. Conclusion

In this study, we have examined the challenges of exchange rate and tax rate variations on the transfer pricing decisions of MNFs and its impact on overall firm performance. We analyzed related research papers and built on existing theoretical frameworks to provide managers and regulators additional argument on the interacting effect on transfer price of changing exchange rates and uncertain regulatory framework, including taxation risk. We used existing theoretical and empirical models to develop a modified model of multinational transfer pricing under exchange rate variations and tax rate differences. Our Propositions extend existing theories that were previously applied to tax differences by considering the joint effect of the tax differences and exchange rate variations. However, this could also be a major limitation of our study and a limitation of prior studies in this area. What is available in the literature include developed and untested theoretical models and hypothetical case analysis. A possible extension of this study, therefore, will involve applying observational or experimental data to the models to see if the intuitive explanations will differ from the observable results. Notably, there are just a few studies in recent times that have attempted this; however, no studies to our knowledge have attempted the combination of tax and exchange rate models in empirical testing. We hope that this will be the beginning of a stream of related studies that will provide value relevant models of transfer pricing in this era of uncertainties.
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