

BARGAINING

Bargaining is ubiquitous. Married couples are almost constantly negotiating over a variety of matters such as who will do which domestic chores and who will take the kids to the local park on a wet Sunday afternoon. Government policy is typically the outcome of negotiations amongst cabinet ministers. Whether or not a particular piece of legislation meets with the legislature's approval may depend on the outcome of negotiations amongst the dominant political parties. National governments are often engaged in a variety of international negotiations on matters ranging from economic issues (such as the removal of trade restrictions) to global security (such as the reduction in the stockpiles of conventional armaments, and nuclear non-proliferation and test ban), and environmental and related issues (such as carbon emissions trading, bio-diversity conservation and intellectual property rights). Much economic interaction involves negotiations on a variety of issues. Wages, and prices of other commodities (such as oil, gas and computer chips) are often the outcome of negotiations amongst the concerned parties. The recent wave of mergers and acquisitions require negotiations over, amongst other issues, the price at which such transactions are to take place.

What variables (or factors) determine the outcome of negotiations such as those mentioned above? What are the sources of bargaining power? What strategies can help improve one's bargaining power? What variables determine whether parties to a territorial dispute will reach a negotiated settlement, or engage in military war? How can one enhance the likelihood that parties in such negotiations will strike an agreement quickly so as to minimise the loss of life through war? What strategies should one adopt to maximise the negotiated sale price of one's house? How can one negotiate a better deal (such as a wage increase) from ones employers? The modern theory of bargaining developed over past several decades seeks to address the above and many similar real-life questions concerning bargaining situations. A few of the main principles from that theory are briefly discussed below; for a more detailed discussion, see Muthoo (2000) . However, for a comprehensive but technical exposition of the main elements of that theory, with some applications, see Osborne and Rubinstein (1990) and Muthoo (1999).

Consider the following situation. An individual, called Aruna, owns a house that she is willing to sell at a minimum price of £50,000; that is, she "values" her house at £50,000. Another individual, called Mohan, is willing to pay up to £70,000 for Aruna's house; that is, he values her house at £70,000. If trade occurs [that is, if Aruna sells the house to

Mohan] at a price that lies between £50,000 and £70,000, then both Aruna (the “seller”) and Mohan (the “buyer”) would become better off. This means that in this situation these two individuals have a common interest to trade. At the same time, however, they have conflicting (or divergent) interests over the price at which to trade: Aruna, the seller, would like to trade at a high price, while Mohan, the buyer, would like to trade at a low price. Any exchange situation, such as the one just described, in which a pair of individuals (or organisations) can engage in mutually beneficial trade but have conflicting interests over the terms of trade is a *bargaining situation*. Stated in general terms, a bargaining situation is a situation in which two or more players — where a “player” can be either an individual, or an organisation (such as a firm, a political party or a country) — have a common interest to co-operate, but have conflicting interests over exactly how to co-operate.

There are two main reasons for being interested in bargaining situations. The first, practical reason is that many important and interesting human (economic, social and political) interactions are bargaining situations. As mentioned above, exchange situations (which characterise much of human economic interaction) are bargaining situations. In the arena of social interaction, a married couple, for example, is involved in many bargaining situations throughout the relationship. In the political arena, a bargaining situation exists, for example, when no single political party on its own can form a government (such as when there is a hung parliament); the party that has obtained the most votes will typically find itself in a bargaining situation with one or more of the other parties. Witness the current coalition in Austria, Germany, India, Italy and Turkey or the co-habitations in France between Presidents of one party and Prime Ministers of another and the often severe divergence between the legislative and the executive arms in the USA. The second, theoretical reason for being interested in bargaining situations is that understanding such situations is fundamental to the development of an understanding of the workings of markets and the appropriateness, or otherwise, of prevailing monetary and fiscal policies.

The main issue that confronts the players in a bargaining situation is the need to reach agreement over exactly how to co-operate. Each player would like to reach some agreement rather than to disagree and not reach any agreement, but each player would also like to reach an agreement that is as favourable to her as possible. It is thus possible that the players will strike an agreement only after some costly delay, or indeed fail to reach any agreement — as is witnessed by the history of disagreements and costly delayed agreements in many real-life

situations (as exemplified by the occurrences of trade wars, military wars, strikes and divorce). *Bargaining* is any process through which the players try to reach an agreement. This process is typically time consuming, and involves the players making offers and counteroffers to each other. A main focus of any theory of bargaining is on the *efficiency* and *distribution* properties of the outcome of bargaining. The former property relates to the possibility that the players fail to reach an agreement, or that they reach an agreement after some costly delay. Examples of costly delayed agreements include: when a wage agreement is reached after lost production due to a long strike, and when a peace settlement is negotiated after the loss of life through war. The distribution property relates to the issue of exactly how the gains from co-operation are divided between the players. The principles of bargaining theory determine the roles of various key factors (or variables) on the bargaining outcome (and its efficiency and distribution properties). As such they determine the sources of a player's bargaining power.

If the bargaining process is “frictionless” — by which I mean that neither player incurs any cost from haggling — then each player may continuously demand that agreement be struck on terms that are most favourable to her. For example, in the exchange situation described above, Aruna may continuously demand that trade take place at the price of £69,000, while Mohan may continuously demand that it take place at the price of £51,000. In such a circumstance the negotiations are likely to end up in an impasse (or deadlock), since the negotiators would have no incentive to compromise and reach an agreement. Indeed, if it did not matter *when* the negotiators agree, then it would not matter *whether* they agreed at all. In most real-life situations the bargaining process is not frictionless. A basic source of a player's cost from haggling comes from the twin facts that bargaining is time consuming and that time is valuable to the player. Indeed a player's bargaining power will tend to be higher the less impatient she is relative to the other negotiator. For example, in the exchange situation described above, the price at which Aruna sells her house will be higher the less impatient she is relative to Mohan. Indeed, patience confers bargaining power. A person who has been unemployed for a long time is typically quite desperate to find a job, and, may thus be willing to accept work at almost any wage. The high degree of impatience of the long-term unemployed can be exploited by potential employers, who may thus obtain most of the gains from employment. As such, an important role of minimum wage legislation would seem to be to strengthen the bargaining power of the long-term unemployed. In general, since a

player who is poor is typically more eager to strike a deal in any negotiations, poverty (by inducing a larger degree of impatience) adversely affects bargaining power. No wonder, then, that the richer nations of the world often obtain relatively better deals than the poorer nations in international trade negotiations. Another potential source of friction in the bargaining process comes from the possibility that the negotiations might breakdown into disagreement because of some exogenous and uncontrollable factors. Even if the possibility of such an occurrence is small, it nevertheless may provide appropriate incentives to the players to compromise and reach an agreement. Indeed, risk aversion adversely affects bargaining power: i.e., a player's bargaining power is higher the less averse she is to risk relative to the other negotiator.

In many bargaining situations the players may have access to "outside" options and/or "inside" options. For example, in the exchange situation described above, Aruna may have a non-negotiable (fixed) price offer on her house from another buyer; and, she may derive some "utility" (or benefit) while she lives in it. The former is her outside option, while the latter her inside option. When, and if, Aruna exercises her outside option, the negotiations between her and Mohan terminate forever in disagreement. In contrast, her inside option is the utility per day that she derives by living in her house while she temporarily disagrees with Mohan over the price at which to trade. As another example, consider a married couple who are bargaining over a variety of issues. Their outside options are their payoffs from divorce, while their inside options are their payoffs from remaining married but without much co-operation within their marriage. A player's bargaining power is higher the better is his outside option and/or inside option.

Commitment tactics also affect the bargaining outcome. This tactic involves a negotiator taking actions prior to and/or during the negotiations that partially commit her to some favourable bargaining position. For example, before a government goes to international trade negotiations, it may attempt to enhance its bargaining position through public statements calculated to arouse a public opinion that permits few concessions to be made. A player's bargaining power is higher the larger is her cost of revoking her partial commitment; it is as if "weakness" (having a high cost of revoking a partial commitment) is a source of bargaining strength. For example, a national government's bargaining power in international trade negotiations is higher the larger is the cost to that government of renegeing on public commitments made to its electorate. A key principle is that the deployment of such commitment tactics can result in disagreements and/or costly delayed agreements. This may occur, for example, when two or more governments make

incompatible partial commitments to their respective electorates, and their respective costs of reneging such partial commitments are sufficiently large.

Another important determinant of the outcome of bargaining is the extent to which information about various variables (or factors) are known to all the parties in the bargaining situation. For example, the outcome of union-firm wage negotiations will typically be influenced by whether or not the current level of the firm's revenue is known to the union. A key principle is that costly delays can be mechanisms through which privately held information is credibly communicated to the uninformed party. Consider, for example, union-firm negotiations in which the union can either be "tough" or "weak", but this is not known to the firm. If the union is tough, then in order to credibly communicate that information to the firm [and thus be able to extract a higher wage] it needs to go on a costly strike, something which a weak union would not carry out.

We conclude by noting that a bargaining situation is a game in the sense that the outcome of bargaining depends on both players' bargaining strategies: whether or not an agreement is struck, and the terms of the agreement (if one is struck), depends on both players' actions during the bargaining process. Indeed, the principles of bargaining theory developed over these several decades are obtained by using the methodology of game theory.

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References

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