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Financial Constraints and Bargaining Power in Football Transfers: An Exploratory Multiple-Case Study

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Abstract

This dissertation examines whether financial constraints faced by selling clubs, understood as the clubs transferring a player to another club, are associated with weaker bargaining power in football transfers. While previous research has extensively analysed the determinants of transfer fees and player market values, comparatively less attention has been paid to how the financial condition of the selling club may affect the distribution of the economic surplus generated by a transfer.

To investigate this relationship, the study develops an empirical application of an adapted Nash bargaining framework. Seller and buyer surpluses are estimated using transaction-level information on transfer compensation, player market values, wages, transaction costs, contractual duration and contingent future-sale rights. These estimates are then used to derive model-implied bargaining weights. The empirical analysis adopts an exploratory multiple-case study design structured around five matched pairs of transfers, each comparing a financially constrained seller with a less constrained comparison club in transactions involving broadly similar players and market conditions.

Under the baseline specification, the financially constrained seller obtains a lower implied bargaining weight in four of the five matched pairs. When contingent sell-on rights are assigned no current economic value, the expected ordering is observed in all five comparisons. Although the magnitude of the estimated differences varies substantially across cases, the directional pattern is therefore relatively consistent.

Consistent with the exploratory nature of the study, the findings provide comparative evidence that financial constraints may weaken a selling club's ability to appropriate the economic surplus generated by a transfer.

Keywords: Football transfers; Bargaining power; Financial constraints; Nash bargaining; Transfer market.

Resumo

Esta dissertação analisa se as restrições financeiras enfrentadas pelos clubes vendedores estão associadas a um menor poder negocial nas transferências de jogadores de futebol. Embora a literatura existente tenha analisado extensivamente os determinantes das taxas de transferência e dos valores de mercado dos jogadores, tem sido dada comparativamente menos atenção à forma como a situação financeira do clube vendedor pode afetar a distribuição do excedente económico gerado por uma transferência.

Para analisar esta relação, o estudo desenvolve uma aplicação empírica baseada numa adaptação do modelo de negociação de Nash. Os excedentes do clube vendedor e do clube comprador são estimados com recurso a informação específica de cada transação, incluindo compensação de transferência, valores de mercado dos jogadores, salários, custos de transação, duração contratual e direitos contingentes sobre futuras transferências. Estas estimativas são depois utilizadas para obter pesos negociais implícitos no modelo. A análise empírica segue um desenho de estudo de casos múltiplos de natureza exploratória, estruturado em cinco pares de transferências, comparando, em cada caso, um clube vendedor financeiramente condicionado com um clube de comparação menos condicionado, em transações envolvendo jogadores e contextos de mercado amplamente semelhantes.

Na especificação base, o clube financeiramente condicionado apresenta um peso negocial implícito inferior em quatro dos cinco pares. Quando os direitos de venda futura não recebem qualquer valor económico atual, este padrão verifica-se nos cinco pares. Apesar de a magnitude das diferenças variar consideravelmente entre casos, a direção dos resultados revela-se relativamente consistente.

Em linha com a natureza exploratória do estudo, os resultados fornecem evidência comparativa de que as restrições financeiras podem reduzir a capacidade do clube vendedor para apropriar uma maior parcela do excedente económico gerado pela transferência.

Palavras-chave: Transferências de futebol; Poder negocial; Restrições financeiras; Negociação de Nash; Mercado de transferências.

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1 Introduction

The transfer of professional football players is not simply a process through which talent is assigned a market price. Transfers are negotiated transactions in which the final distribution of value depends on the economic interests, constraints and bargaining positions of the clubs involved. Although player quality, age, sporting performance and remaining contractual duration are central determinants of transfer value, the circumstances surrounding the negotiating parties may also influence the outcome of the transaction. In particular, the financial position of the selling club may affect its ability to reject offers, delay negotiations or extract a greater share of the economic surplus generated by the transfer.

Existing research on football transfers has devoted substantial attention to the determinants of transfer fees and player market values. Variables such as age, performance, position, international experience and remaining contractual duration are commonly identified as relevant to the valuation of players. However, considerably less attention has been paid to the financial condition of the selling club as a potential determinant of bargaining outcomes. This constitutes an important gap, since clubs experiencing financial pressure may face stronger incentives to complete transfers, generate liquidity or reduce wage commitments. These circumstances may weaken their negotiating position even when the player being sold retains considerable sporting and economic value.

This dissertation therefore investigates whether financially constrained selling clubs tend to exhibit lower bargaining power in permanent player transfers than comparable non-constrained sellers. The underlying expectation is that financial pressure may reduce the seller's ability to appropriate the surplus generated by the transaction. The analysis focuses on how the estimated economic surplus associated with each transfer is distributed between the selling and acquiring clubs.

To examine this relationship, the dissertation adopts an exploratory multiple-case study design and develops an empirical application based on an adapted Nash bargaining framework. Seller and buyer surpluses are estimated using transaction information, including transfer compensation, player market values, wages, transaction costs, contractual duration and, when relevant, contingent future-sale rights. These surpluses are then used to derive implied bargaining weights for both parties. The empirical strategy is organised around five matched pairs of transfers, each comparing a financially constrained seller with a non-

constrained comparison club in transactions involving broadly similar players and market contexts. This exploratory multiple-case design is intended to improve comparability and identify recurring patterns across heterogeneous negotiations, rather than to estimate a causal effect.

The exploratory study contributes to the literature in two main respects. First, it incorporates the financial position of the selling club explicitly into the study of transfer bargaining, complementing approaches centred primarily on player and contractual characteristics. Second, it proposes an operational framework through which bargaining power can be inferred from the estimated distribution of transaction surplus using publicly observable data. The resulting bargaining weights should not be interpreted as directly observed measures of negotiating strength, but as model-implied indicators that allow structured comparison across cases.

The remainder of the dissertation is organised as follows. The next chapter reviews the literature on football transfers, player valuation, contractual determinants and bargaining theory, providing the conceptual basis for the empirical analysis. The model chapter then develops the bargaining framework, defines the construction of seller and buyer surpluses and explains the matched-pair selection strategy. The empirical section applies the model to the selected transfers, presents the within-pair and cross-pair results, and evaluates their robustness to alternative treatments of contingent components. The dissertation concludes by discussing the implications of the findings, the principal limitations of the analysis and directions for future research.

2 Literature Review

Professional football is a highly specialised labour market. In order to remain competitive on a sporting level and maintain their economic activity, clubs must navigate this market through the recruitment, retention and mobility of players. Contracts, wages and transfers are tightly connected. For a player contractually linked to one club to be transferred to another, a transaction between those two clubs is required (Frick, 2007). Consequently, player transfers generate significant financial flows between clubs thus serving as a mechanism for the distribution of talent and resources in professional football (Hoey et al., 2021). However, the compensation associated with a transfer is neither automatically determined by a regulatory framework nor necessarily an objective measure of the player's economic value. Instead, the amount results from a negotiation in which the buying and selling clubs may assign different values to the completion of the transfer and face distinct consequences should the deal not happen. This aspect of the negotiation is supported by Carmichael and Thomas (1993), who analysed the determination of transfer fees through a bilateral bargaining model between buyer and seller. Consequently, the transfer fee can be understood not only as a reflection of the player's economic and sporting attributes, but also as the outcome of an interaction between two parties with potentially differing interests, valuations, and bargaining positions.

A substantial strand of the literature on football transfer markets has sought to identify the factors that explain variation in transfer fees. Carmichael et al. (1999), for instance, show that individual player characteristics influence both the probability of a transfer and the amount of compensation paid, while subsequent research has extended this analysis to a broader range of determinants, including performance, age, playing position, experience, contractual characteristics and the circumstances of the clubs involved (Frick, 2007). This literature has demonstrated that transfer fees reflect a complex combination of observable player attributes and transaction-specific conditions, and that a considerable share of their variation can be explained by such factors. However, explaining or predicting the amount paid for a player is not necessarily equivalent to explaining how the economic benefits associated with the transfer are distributed between buyer and seller. Two transactions involving players with similar characteristics may produce different outcomes not only because the players have different economic valuations, but also because the clubs involved face different alternatives, needs and constraints during the negotiation process. The analysis of transfer-fee determinants therefore captures only one dimension of the transaction. Understanding its

economic outcome also requires consideration of the bargaining process through which the gains generated by the agreement are divided between the parties.

This distinction brings bargaining theory to the centre of the analysis. Bargaining problems arise when parties can obtain mutual gains from reaching an agreement, but each party tries to influence their division to their advantage. Nash (1950) formalised this problem by considering both the set of outcomes available through agreement and the outcome that would prevail in the event of disagreement. The resulting individual surpluses therefore depend not only on the value created by the agreement, but also on what each party can obtain if negotiations fail. Within this framework, the final allocation of the gains is shaped not only by the overall size of the surplus but also by the relative bargaining position of each party. This perspective is relevant to football transfers, where the buying and selling clubs can both benefit from completing a transaction while simultaneously having diverging preferences over the amount of the transfer fee. Consequently, similar levels of economic surplus may be divided differently depending on the alternatives available to each club and their capacity to influence the negotiated outcome. Bargaining theory therefore provides a useful framework for moving beyond the explanation of observed transfer fees towards an analysis of how the gains generated by a transfer are distributed between buyer and seller.

Financial constraints provide one potential source of such bargaining asymmetries. In corporate finance, financially constrained firms are generally characterised by limited access to external funding, which increases their dependence on internally generated resources and liquidity (Fazzari et al., 1988). Financial distress represents a more acute condition: Wruck (1990) associates it with situations in which operating cash flows are insufficient to meet current financial obligations. These conditions can affect not only investment decisions but also the circumstances under which firms dispose of assets. Shleifer and Vishny (1992) show theoretically that financially distressed firms may be forced to liquidate assets under unfavourable market conditions, while Pulvino (1998), using commercial aircraft transactions, finds empirical evidence that capital-constrained firms sell assets at significant discounts relative to unconstrained sellers. Although player transfers differ substantially from conventional asset sales, the underlying mechanism is potentially relevant to football: a club facing financial pressure may place greater value on immediate liquidity and have less capacity to postpone a sale or reject an unfavourable offer. Financial constraints may therefore weaken the seller's bargaining position by increasing the cost of disagreement and reducing

its ability to wait for alternative buyers, potentially allowing the acquiring club to capture a larger share of the gains generated by the transfer.

Taken together, these strands of literature point to a gap that remains insufficiently explored in the context of professional football transfers. Existing studies have extensively examined the determinants of transfer fees and have shown that player characteristics, contractual conditions and club-specific factors help explain observed transaction values. Bargaining theory, in turn, demonstrates that negotiated outcomes depend not only on the total gains available from agreement, but also on the relative position of the parties and on the consequences they face if negotiations fail. Corporate finance research further suggests that financial constraints can weaken a seller's ability to delay transactions, reject unfavourable terms or wait for alternative buyers. However, these perspectives have largely developed separately. In particular, limited attention has been paid to whether the financial condition of the selling club systematically affects the share of economic surplus it is able to capture in player transfers. This distinction is important because an observed transfer fee alone does not reveal whether a seller obtained a favourable negotiated outcome relative to the value created by the transaction. This exploratory multiple-case study addresses this gap by examining comparable player transfers involving financially constrained and unconstrained selling clubs, with the aim of assessing whether financial constraints are associated with weaker bargaining positions and a smaller share of the surplus generated by the agreement.

3 Model

In this dissertation, each transfer will be analysed as a negotiation between the seller club and the buyer club over the value to be paid for the contractual rights to the player. This will constitute a simplification of the process, since transfers also depend on the player's approval. This simplification is supported by the fact that all transfers analysed were completed, implying that the players ultimately approved the transactions. The model's purpose is to understand how the economic surplus generated by the deal is ultimately divided between the clubs.

Nash's bargaining solution seems to be an adequate option for the previously mentioned goal by providing a framework where the outcome of the negotiation is seen as a division of the resulting surplus between two parties that possess different goals, whose outcomes depend on the benefits derived from the agreement and their relative bargaining power (Nash, 1950). Applying this to the cases under analysis, the framework allows the observed fee to be interpreted not only as the economic value of the player, but also as the way through which the surplus created by the transfer is distributed between the clubs involved.

The bargaining problem is constituted by two parties, the selling and the buying clubs, and by the transfer fee negotiated between the clubs, denoted by P. An agreement is reached when the buying club pays the agreed fee and, in return, receives the player's registration rights, subject to the player's approval and the subsequent signing of a new employment contract with the buying club. In the scenario where there is no agreement the player will remain contractually bound to the selling club, while the buying club will keep the financial resources that it would commit to the transfer. Consequently, each club will evaluate the possible transfer fee by comparing the economic outcome generated by the agreement with the outcome that would prevail if no agreement, and therefore no transaction, occurred. As expected, an agreement exists only when the transaction generates enough economic value so that the clubs are left in a position not worse than that they would be in if the negotiations failed.

The selling club's surplus is defined as the incremental economic benefit obtained from completing the transfer rather than retaining the player. It is expressed as:

$$S_s = P + W_s + SO - C_s - CF \times V_s \quad (1)$$

where P represents the transfer fee received by the selling club including possible future add-ons, W_s represents a year's wage expenditure saved by the selling club, SO corresponds to the estimated value of any sell-on clauses that were part of the agreement, and C_s incorporates any additional cost borne by the seller, such as intermediary costs, solidarity contributions or amounts payable to previous clubs due to sell-on clauses. V_s represents the player's market value at the time of the transfer, while CF denotes a contract factor adapted from the relationship between residual contract duration and transfer fees estimated by Poli et al. (2024). When the player approaches the end of his contract, the factor adjusts the player's current market value according to the remaining duration of his employment contract, with shorter residual contract periods reducing the economic value attributed to the seller's alternative of retaining the player. The term $CF \times V_s$ therefore captures the economic value relinquished by the selling club when the player is transferred. In sum, the seller's surplus comprises the immediate transfer compensation, the salary costs avoided, and the expected value of any retained future economic rights, net of the costs associated with the transaction and the economic value surrendered through the player's departure.

The buying club's surplus is defined as the incremental economic benefit obtained from completing the transfer and incorporating the player into its squad. It is expressed as:

$$S_b = V_b - P - W_b - SO - C_b \quad (2)$$

where V_b denotes the player's market value one year after the transfer and is used as a proxy for the economic value generated by the acquisition following the player's initial integration into the buying club. P represents the transfer fee paid to the selling club including possible future add-ons, while W_b corresponds to a year's wage expenditure of the player's new contract. SO represents the estimated economic value of any sell-on clause retained by the seller and is deducted from the buyer's surplus because it reduces the share of proceeds from a potential future transfer to which the buying club would otherwise be entitled. Finally, C_b includes the additional transaction costs borne by the buyer, such as intermediary fees, solidarity contributions, and other directly attributable acquisition costs. The buyer's surplus therefore corresponds to the player's estimated economic value one year after the transfer, net of the transfer fee, wage expenditure, future economic rights retained by the seller, and other transaction costs.

Given the surplus functions defined above, the negotiated transfer fee is modelled using the generalised Nash bargaining solution, also referred to as the asymmetric Nash bargaining

solution. This formulation extends Nash's (1950) original symmetric solution by assigning different bargaining weights to the parties (Kalai, 1977).

$$P^* = \arg\max_P [S_s(P)]^{\beta_s}[S_b(P)]^{\beta_b} \tag{3}$$

subject to:

$$S_s(P) \geq 0,\ S_b(P) \geq 0,\ \beta_s + \beta_b = 1$$

In this formulation, P^* constitutes the transfer fee resulting from the bargaining process, while β_s and β_b represent, respectively, the relative bargaining power of the selling and buying clubs. A higher value of β_s signals that the selling club can appropriate a larger proportion of the surplus generated by the transfer, while a higher value of β_b indicates a more advantageous distribution for the buyer. The non-negativity constraints ensure that the agreement is individually rational, meaning that both clubs are at least as well off completing the transfer as they would be if no agreement was to be found.

Since the transfer fee (P) is observed rather than estimated in the empirical analysis, the bargaining model is inverted to estimate the relative bargaining power implied by the outcome of each negotiation. For this inversion, all other transaction-specific components are evaluated at the observed transfer terms and treated as fixed inputs. Under the asymmetric Nash bargaining solution, with the disagreement outcomes normalised to zero and $\beta_s + \beta_b = 1$, the selling club's bargaining power corresponds to the proportion of the total surplus appropriated by the seller. It can therefore be estimated as:

$$\hat{\beta}_s = \frac{S_s(P_{\text{obs}})}{S_s(P_{\text{obs}}) + S_b(P_{\text{obs}})}, \tag{4}$$

while the buying club's bargaining power is given by:

$$\hat{\beta}_b = 1 - \hat{\beta}_s = \frac{S_b(P_{\text{obs}})}{S_s(P_{\text{obs}}) + S_b(P_{\text{obs}})}. \tag{5}$$

Here, P_{obs} denotes the transfer fee effectively agreed between the clubs. A higher value of $\hat{\beta}_s$ indicates that the selling club appropriated a larger share of the surplus generated by the transaction, while a lower value suggests that the distribution was more favourable to the buyer. The estimated coefficient should therefore be interpreted as the selling club's implied bargaining power under the assumptions and valuation inputs of the model, rather than as a directly observable or absolute measure of negotiating strength.

For the sake of simplicity, the model is implemented using nominal, undiscounted monetary values. No present-value adjustment is applied to the transfer compensation, wage

expenditure or transaction costs. This choice is primarily determined by the absence of consistent public information regarding payment schedules, instalment dates, the timing of conditional bonuses and the eventual realisation of sell-on clauses. Applying present-value adjustments only to transactions for which detailed payment schedules are available would reduce comparability across cases, while imposing a common assumed schedule would introduce an additional set of unsupported assumptions. Accordingly, the reported contractual amounts and the estimated economic components of each transfer are treated at their nominal value. The resulting bargaining power estimates should therefore be interpreted as conditional on this nominal-value convention, with the possible effect of deferred payments acknowledged as a limitation of the model.

The player's economic value is proxied using the historical market values published by *Transfermarkt*. V_s denotes the most recent market valuation available on or before the official date of the transfer. Using a valuation published no later than the transaction date prevents information generated after the transfer from affecting the estimate of the economic value initially relinquished by the selling club. V_b corresponds to the first Transfermarkt market valuation published on or after the first anniversary of the transfer. When no such valuation is available at the time of the analysis, the most recent valuation closest to the anniversary date is used, provided that it reasonably approximates the twelve-month observation horizon.

Within the model, V_b is used as a proxy for the economic value known by the buying club when deciding to acquire the player. The underlying assumption is that, at the time of the negotiation, the buyer expects the player's incorporation into its squad and successful integration into its sporting structure to result in the valuation observed twelve months later. For modelling purposes, the buying club is therefore assumed to possess perfect foresight regarding the player's post-transfer market value, so that the value observed ex-post is treated as equivalent to the value expected ex ante. This approach reflects the premise that the buyer's willingness to incur the transfer fee and the associated wage and transaction costs depends not only on the player's value at the time of acquisition, but also on the economic value that the club expects to obtain following his integration.

The twelve-month interval provides the player with an initial period of sporting integration and allows information concerning his performance, development and role within the new squad to be incorporated into his market valuation. At the same time, restricting the analysis

to one year limits the influence of developments occurring substantially after the original negotiation, such as later injuries, managerial changes, contract renewals or wider changes in transfer-market conditions. V_b should consequently be interpreted as a standardised proxy for the buyer's expected economic benefit from the acquisition, rather than as a prediction that the player would necessarily have been sold for that amount after twelve months.

The wage variables capture the change in labour costs generated by the transfer for each club. W_s represents the wage expenditure avoided by the selling club following the player's departure, while W_b represents the wage expenditure incurred by the buying club under the player's new employment contract. Both variables are measured over the twelve months following the transfer, consistently with the period used to observe the player's post-transfer market value, V_b.

The twelve-month horizon is intended to approximate the initial holding period that is most directly associated with the acquisition decision. When acquiring a player, the buying club commits not only to the transfer compensation but also to the remuneration required to incorporate and retain him during his initial period of sporting integration. By the end of the following twelve months, the club will have reached a subsequent comparable transfer window and may reassess the investment, including the possibility of transferring the player and thereby terminating its future wage obligation. The model therefore attributes to the buyer the wage expenditure that it can reasonably be expected to bear during the first year following the acquisition, rather than the entire salary cost over the duration of the new contract. This assumption does not imply that the player cannot be transferred, loaned, released earlier or kept through the whole contract duration but it provides a standardised holding period that can be applied consistently across all cases.

For the selling club, W_s corresponds to the player's annualised guaranteed gross salary when at least twelve months remained on his contract at the date of the transfer. When the residual contractual period was shorter than one year, the wage saving is restricted to the period during which the selling club would otherwise have remained contractually obliged to remunerate the player:

$$W_s = w_s \times \min\left(1, \frac{D}{365}\right), \tag{6}$$

where w_s denotes the player's annualised guaranteed gross salary at the selling club and D represents the number of days remaining on the existing contract. This adjustment prevents

the model from attributing wage savings to the seller beyond the expiry of the player's original employment contract.

For the buying club, W_b corresponds to the player's annualised gross salary during the first twelve months of the new contract.

The model focuses on guaranteed fixed remuneration, since performance-related bonuses are not consistently disclosed.

Salary data are obtained from specialised salary databases or other publicly available sources when necessary. The figures used for the selling and buying clubs are expressed on a comparable basis, preferably as gross guaranteed remuneration, to avoid creating artificial differences between the two wage variables.

The variable P_{obs} represents the total gross nominal transfer compensation agreed between the buying and selling clubs. It is included positively in the selling club's surplus and negatively in the buying club's surplus, since this same compensation constitutes a benefit for one party and a cost for the other. The use of the gross amount, rather than the net proceeds ultimately retained by the seller, allows the costs and deductions associated with the transaction to be identified separately through C_s.

For the purposes of the model, P_{obs} includes both the fixed component of the transfer fee and the full amount of all reported performance-related or conditional bonuses agreed as part of the transaction:

$$P_{obs} = P_{\text{fixed}} + P_{\text{bonuses}}. \tag{7}$$

Bonuses are included irrespective of whether their underlying conditions have already been fulfilled or whether payment has been confirmed at the time of the analysis. This treatment reflects the assumption that all contractual components of the transfer package form part of the economic value negotiated between the clubs. It also ensures that transactions with different combinations of fixed and contingent compensation are evaluated according to their total potential contractual value, rather than only according to the amount guaranteed at the date of the transfer. Accordingly, P_{obs} should be interpreted as the maximum reported transfer package and not necessarily as the amount already paid by the buying club or effectively received by the seller.

The value of P_{obs} is obtained, whenever possible, from official club announcements, annual reports, stock-exchange disclosures or other regulatory communications. When official

information is unavailable or incomplete, the analysis relies on reporting from reputable media sources, with the reported amount corroborated through multiple independent sources whenever possible.

Intermediary fees, solidarity contributions, payments owed to previous clubs and other seller-side deductions are not subtracted directly from P_{obs}. These components are recorded separately through C_s, thereby preserving the distinction between the total compensation negotiated in the agreement and the amount ultimately retained by the selling club.

When the transfer compensation is payable in instalments, the total nominal contractual amount is used without applying a present-value adjustment. Although deferred payments are economically less valuable than immediate payments of the same nominal amount, detailed information concerning payment schedules, instalment dates and financing arrangements is not consistently disclosed across the selected transfers. Discounting only the cases for which such information is available would reduce comparability, while imposing a common assumed schedule would introduce additional unsupported assumptions. The model therefore disregards the time value of money and treats both fixed and contingent transfer compensation at their nominal value.

The variable SO represents the economic value of any sell-on rights retained by the selling club as part of the transfer agreement. These clauses provide the seller with a contractual entitlement to a proportion of the proceeds generated by a subsequent transfer of the player. They therefore increase the selling club's surplus, while reducing the economic value retained by the buying club.

The valuation of SO follows the same twelve-month and perfect-foresight assumptions applied to V_b. The model assumes that the clubs can anticipate the player's market value one year after the transfer and treats this value as the amount against which the retained future right can be evaluated. This does not imply that the player will necessarily be transferred after twelve months. Rather, SO represents the value of the seller's contractual claim on the player's estimated resale value at the end of the model's period.

When the selling club retains a proportion α of the gross value of a future transfer, the clause is valued as:

$$SO = \alpha V_b. \tag{8}$$

However, when the clause applies only to the capital gain generated by a subsequent transfer, the value is calculated as:

$$SO = \alpha \max(V_b - P_{obs}, 0). \quad (9)$$

In the latter expression, no value is attributed to the clause when V_b does not exceed the relevant acquisition cost.

The percentage α is obtained, whenever possible, from official club announcements, annual reports, stock-exchange disclosures or other regulatory communications. When official information is unavailable or incomplete, reporting from reputable media sources will act as a substitute.

The variables C_s and C_b represent the transaction costs not included in any of the previously mentioned variables borne by the selling and buying clubs, respectively. These costs are recorded separately from the transfer compensation and wage expenditure in order to distinguish the compensation negotiated between the clubs from the additional financial consequences associated with completing the transaction. Each cost is assigned to the club that ultimately bears its burden.

For the selling club, C_s includes intermediary or agent fees borne by the club itself, the portion of the solidarity contribution that reduces the compensation ultimately retained by the club, payments owed to previous clubs under pre-existing sell-on clauses, and any other identifiable costs directly attributable to the player's departure. A sell-on obligation owed to a previous club is therefore treated differently from SO: while SO represents a future economic right retained by the seller through the current transaction, an existing sell-on obligation reduces the proceeds retained from the present transfer and is consequently included in C_s.

The treatment of solidarity payments depends on the reported structure of the transaction. Where P_{obs} corresponds to the gross transfer compensation and part of that amount is deducted for distribution among the clubs involved in the player's training, only the portion that does not ultimately remain with the selling club is included in C_s.

For the buying club, C_b includes intermediary or agent fees borne by the buyer and any other identifiable costs directly attributable to completing the acquisition.

Whenever specific information on agent fees is available, the amount effectively reported is used. When no reliable specific amount can be identified, agent costs are estimated using the

reference percentages published by Fédération Internationale de Football Association (FIFA, 2023). For an agent acting on behalf of the releasing club, the estimated fee corresponds to 10% of the transfer compensation. For an agent acting on behalf of the engaging club, the estimate corresponds to 5% of the player's annual remuneration when that remuneration does not exceed USD 200,000, or the equivalent amount in another currency, and 3% when it exceeds that threshold. These percentages are applied as standardised estimation benchmarks rather than as evidence of the amount actually paid in the individual transaction.

The contract factor, CF, adjusts the player's market value at the time of the transfer, V_s, when the remaining duration of his contract is sufficiently short to weaken the selling club's no-agreement position. For the purposes of the model, a residual contract duration of two years is treated as providing full contractual protection. Accordingly, no additional contractual adjustment is applied when the player has at least two years remaining on his contract, and CF is set equal to one.

The two-year threshold reflects the assumption that, below this point, the selling club faces increasing pressure to either renew the player's contract or complete a transfer before entering the final contractual year. As expiry approaches, the club's ability to retain or subsequently realise the player's economic value progressively deteriorates.

For players with fewer than two years remaining, the contract factor is calculated as:

$$CF = \left(\frac{D}{730}\right)^{0.485},$$

where D denotes the number of contractual days remaining at the official transfer date and 730 days correspond to the two-year reference period. For players with at least 730 days remaining, CF is set equal to one. The exponent of 0.485 is adapted from the positive and non-linear relationship between residual contract duration and transfer fees estimated by Poli et al. (2024).

The resulting contract-adjusted value relinquished by the selling club is represented by:

$$CF \times V_s. \tag{10}$$

Under this specification, the adjustment becomes progressively stronger as the contract approaches expiry, while no additional reduction is imposed when the selling club retains at least two years of contractual control. The two-year threshold and the normalisation of the coefficient constitute methodological choices of the present study rather than a contract factor directly proposed by Poli et al. (2024).

In sum, transaction information is collected according to a consistent hierarchy of sources. Official club announcements, financial statements, regulatory disclosures and FIFA documentation are prioritised, followed by reputable national and specialist media reports. Transfermarkt is used for historical market values, while specialised salary databases are used for wage data. Whenever possible, monetary amounts are corroborated through more than one independent source. When an amount is originally reported in a currency other than euros, it is converted using the exchange rate applicable on the official transfer date. When transaction-specific agent fees are unavailable, the relevant FIFA reference percentages are used as standardised estimates. The bargaining-power estimates should therefore be interpreted as conditional on the information publicly observable or that can be consistently estimated under the methodological rules adopted.

The following section applies the model to the selected transfer cases. For each transaction, the variables described above are estimated using the information available at the time of the analysis, after which the selling and buying clubs' surpluses are calculated using the observed transfer conditions. These estimates are then used to derive the bargaining weights implied by each negotiated outcome. The transfers are analysed in matched pairs involving players with broadly comparable characteristics and transactions completed under similar market conditions, with each pair contrasting a financially constrained selling club with a seller not subject to equivalent constraints. This comparative structure makes it possible to assess whether financial constraints are systematically associated with a smaller share of the transaction surplus being appropriated by the selling club.

4 Application of the model

In order to conduct the empirical analysis, five matched pairs were selected. The pairs were selected on the basis of similarities in both player characteristics and transaction-specific conditions. Age, position, transfer timing and destination market were some of the characteristics that were looked at. An additional requirement was that each pair contrast a player sold by a financially constrained club with one sold by a less constrained comparison club. This approach aims to isolate, as far as possible, the effect of the selling club's financial condition on the transfer terms. Accordingly, each pair is examined separately to assess how closely it satisfies these matching criteria.

For each matched pair, the analysis first establishes the comparability of the players and the financial condition of the selling clubs, before presenting the transaction data, calculating the respective surpluses and implied bargaining weights and comparing the distribution of surplus between the two transfers.

4.1 Pair 1: Matías Soulé and Désiré Doué

4.1.1 Selection and comparability of the matched pair

The first matched pair compares the permanent transfers of Matías Soulé from Juventus to AS Roma and Désiré Doué from Stade Rennais to Paris Saint-Germain, both completed during the 2024 summer transfer window. Soulé was 21 years old at the time of his transfer, while Doué was 19, placing both players at an early stage of their professional development. The two can be broadly classified as young, technically skilled attacking players capable of operating from wide positions or in more central creative roles. Both had also progressed through the development structures of their selling clubs before establishing themselves at senior level. Soulé joined Juventus in January 2020 and subsequently represented its Under-19 team (Juventus Football Club S.p.A. [Juventus], 2024g). On the other hand, Doué had been at Rennes since the age of six and completed his entire development within the club's academy (Stade Rennais F.C., 2024b).

Although the players are not identical in position or playing style, the pairing captures two transactions involving highly rated academy-developed attacking prospects sold during the same market window and expected to generate substantial post-transfer development. The comparison is therefore not based on an assumption of perfect equivalence, but on sufficient

similarity in age, development stage, attacking profile and transfer timing to limit observable differences unrelated to the financial position of the selling club.

At the beginning of the 2024 summer transfer window, Juventus could reasonably be classified as a financially constrained seller. The club closed the 2023/24 financial year with consolidated revenues of €394.6 million, a net loss of €199.2 million, shareholders' equity of only €40.2 million and net financial debt of €242.8 million. The annual report attributed approximately €90-95 million of the adverse financial impact to the absence of UEFA Champions League revenues and identified the structural reduction of costs and net financial debt as central objectives of the club's strategic plan (Juventus, 2024d).

The severity of these difficulties is further demonstrated by the fact that they had already generated regulatory consequences. In July 2023, UEFA's Club Financial Control Body concluded that Juventus had breached the applicable regulatory framework and a previous settlement signed in August 2022. UEFA consequently terminated that agreement, excluding the club from its men's competitions for the 2023/24 season and imposed a financial contribution of up to €20 million (Union of European Football Associations [UEFA], 2023). This sanction shows that Juventus' financial compliance problems had progressed beyond unfavourable accounting indicators and had become sufficiently serious to trigger formal regulatory intervention and even a sporting exclusion.

The club's reliance on external recapitalisation reinforces this assessment. Juventus had raised approximately €900 million from its shareholders through three capital increases over the preceding five years, while its business plan envisaged a return to net profitability only in 2026/27 (Reuters, 2024). Taken together, the recurring losses, substantial indebtedness, dependence on shareholder funding, cost-reduction programme and UEFA sanctions indicate a material need to generate liquidity. These circumstances therefore support the classification of Juventus as a financially constrained seller at the time of the relevant transactions.

Stade Rennais can be used as the comparison club because it faced substantially less immediate financial pressure than Juventus at the beginning of the same transfer window. In 2023/24, Rennes recorded a net loss of only €0.2 million, shareholders' equity of €63.4 million, cash and marketable securities of €15.4 million and financial debt of €7.7 million. The club generated a positive transfer result of approximately €37 million, which largely offset an operating loss of €30.8 million. The accounts also recorded €102.6 million in

shareholder current accounts, meaning that the club's stability partly depended on the financial support of its ownership; however, this support reduced its exposure to conventional financial debt and immediate liquidity pressure (Ligue de Football Professionnel [LFP], 2025b).

This comparatively stable position is corroborated by external evidence. When the DNCG examined Rennes for the 2024/25 season, it imposed no restrictions on the club's wage bill, transfer expenditure or general financial activity (LFP, 2024a). Shortly before the transfer window, sporting director Frederic Massara described Rennes as a solid and well-structured club, expressly highlighting the strength of the Pinault family as shareholders and noting that the club's new training facilities were being fully financed by its owner (Stade Rennais F.C., 2024a).

Rennes should not therefore be understood as completely independent of player-sale revenues, since transfer trading remained an important component of its financial model. Its classification as the non-constrained club is comparative. Unlike Juventus, Rennes was not subject to regulatory restrictions, carried limited conventional financial debt and benefited from strong shareholder support. These characteristics indicate that the sale of Doué was conducted under materially weaker financial pressure than the transactions undertaken by Juventus, making Rennes an appropriate non-constrained comparison.

4.1.2 Matías Soulé: transaction and model inputs

Matías Soulé's permanent transfer from Juventus to AS Roma was completed on 30 July 2024. Juventus officially disclosed fixed transfer compensation of €25.6 million, payable over four financial years, together with variable bonuses of up to €4 million. In accordance with the methodological rule under which all quantifiable contractual bonuses are incorporated into the transfer price, the model assigns a total nominal transfer compensation of €29.6 million.

The nominal amount is used despite the deferred payment structure, as the model does not discount transfer payments whose precise timing cannot be applied consistently across all cases (Juventus, 2024c).

Transfermarkt valued Soulé at €25 million at the time of the transfer. The first market-value update published after the first anniversary of the transaction valued him at €35 million (Transfermarkt, n.d.-f).

Soulé's contract with Juventus was due to expire on 30 June 2026, leaving 700 days remaining at the date of the transfer. Since the residual contractual period was shorter than the two-year reference threshold adopted in the model, the contract factor is calculated as:

$$CF = \left(\frac{700}{730}\right)^{0.485} = 0.980.$$

The contract-adjusted value relinquished by Juventus is therefore:

$$CF \times V_s = 0.980 \times 25.000 = €24.500 \text{ million.}$$

The contractual information is obtained from Juventus' annual report (Juventus, 2024d, p.72).

Soulé's annual gross fixed salary before the transfer is estimated at €560,000, while his annual gross fixed salary following the transfer to Roma is estimated at €3.7 million.

The pre-transfer amount is used as the best publicly available proxy for the salary obligation associated with Soulé's contract before his permanent departure. Both figures should be treated as estimates rather than official club disclosures (Capology, n.d.-f).

Media reports indicate that Juventus retained a right to 10% of the capital gain generated by a future resale of Soulé (Aliprandi, 2026). The sell-on right is operationalised as:

$$SO = 0.10 \times (35.000 - 29.600) = €0.540 \text{ million.}$$

This amount represents the estimated economic value of the contingent right within the model rather than a payment already received by Juventus.

No transaction-specific information concerning the agent fees incurred by either club was identified. The standardised estimation benchmarks established in the preceding methodological section are therefore applied:

$$C_s = 0.10 \times 29.600 = €2.960 \text{ million,}$$

$$C_b = 0.03 \times 3.700 = €0.111 \text{ million.}$$

These values are model-based estimates and should not be interpreted as the commissions effectively paid in the transaction.

4.1.3 Désiré Doué: transaction and model inputs

Désiré Doué's permanent transfer from Stade Rennais to Paris Saint-Germain was completed on 17 August 2024. Paris Saint-Germain confirmed that the player had signed a

five-year contract, valid until 30 June 2029 (Paris Saint-Germain, 2024), while Stade Rennais announced the departure of a player who had completed his entire development within the club's academy (Stade Rennais F.C., 2024b).

Media reports identified a fixed transfer fee of approximately €50 million while indicating that the complete package could reach €70 million once the contractual bonuses were included (Jacquot, 2025). In accordance with the methodological rule under which all publicly quantifiable bonuses are incorporated into the transfer price, the transaction is therefore valued at €70 million.

Transfermarkt valued Doué at €30 million at the time of the transaction. The first market-value update published after the first anniversary of the transfer, on 10 October 2025, valued him at €90 million (Transfermarkt, n.d.-b).

Doué's contract with Stade Rennais was due to expire on 30 June 2026 (Stade Rennais F.C., 2023). At the transfer date, the agreement therefore had 682 days remaining. Since this residual contractual duration was below the two-year reference threshold adopted in the model, the contract factor is calculated as:

$$CF = \left(\frac{682}{730}\right)^{0.485} = 0.968.$$

The contract-adjusted value relinquished by Stade Rennais is consequently:

$$CF \times V_s = 0.968 \times 30.000 = €29.040 \text{ million.}$$

Doué's estimated gross fixed salary during his final season at Stade Rennais was €520,000 per year. Following his transfer, his estimated gross fixed salary at Paris Saint-Germain increased to €6 million per year (Capology, n.d.-b).

No reliable public information indicating that Stade Rennais retained a sell-on right in relation to a future transfer of Doué was identified.

No transaction-specific agent fees were publicly disclosed. The standardised estimation benchmarks established in the methodology are consequently applied. The seller-side cost is estimated at 10% of the total transfer package while the buyer-side cost is estimated at 3% of Doué's annual gross fixed remuneration:

$$C_s = 0.10 \times 70.000 = €7.000 \text{ million.}$$

$$C_b = 0.03 \times 6.000 = €0.180 \text{ million.}$$

These amounts are model-based estimates and should not be interpreted as the commissions effectively paid by Stade Rennais or Paris Saint-Germain.

4.1.4 Within-pair comparison

The complete transaction-specific inputs used in the application of the model to Soulé's and Doué's transfers are reported in Appendix A, Tables A1 and A2, respectively. The resulting surpluses and implied bargaining weights obtained from the surplus functions and bargaining-weight equations defined in the methodological section are reported in Table 1.

Measure	Soulé: Juventus–Roma	Doué: Rennes–PSG
Transfer compensation, P_{obs}	€29.600m	€70.000m
Seller surplus, S_s	€3.240m	€34.480m
Buyer surplus, S_b	€1.049m	€13.820m
Total surplus	€4.289m	€48.300m
Seller bargaining weight, $\hat{\beta}_s$	0.755	0.714
Buyer bargaining weight, $\hat{\beta}_b$	0.245	0.286

Table 1 - Transfer Compensation, Surplus Distribution, and Implied Bargaining Weights for Pair 1

Both transactions generate positive surpluses for the buying and selling clubs and therefore satisfy the individual-rationality condition imposed by the model. Although Doué's transfer generates a substantially larger surplus in absolute terms, the relevant measure for the comparative analysis is the share of total surplus appropriated by each selling club.

Under the baseline specification, Juventus appropriates approximately 75.6% of the estimated bargaining surplus, compared with 71.4% for Stade Rennais. The financially constrained seller therefore obtains an implied bargaining weight approximately 4.2 percentage points higher than the comparison seller. The result obtained under the baseline specification does not support the expectation that financial constraints are necessarily associated with a lower seller bargaining weight.

The sell-on right retained by Juventus is included in the baseline specification because it formed part of the economic consideration negotiated in the transaction. Its realisation is nevertheless uncertain, since Juventus will only receive a payment if Roma transfers Soulé for a fee that generates a positive capital gain. Soulé may instead remain at Roma until the expiry of his contract, renew his agreement or leave without generating a qualifying transfer fee. A conservative alternative specification is therefore considered in which the sell-on right is assigned no economic value due to its high level of uncertainty.

Treatment of SO	Juventus surplus	Roma surplus	Juventus $\hat{\beta}_s$	Difference from Rennes
Included	€3.240m	€1.049m	0.755	+0.042
Excluded	€2.700m	€1.589m	0.630	−0.084

Table 2 - Sensitivity of the Soulé Transfer Results to the Sell-On Clause

When the sell-on right is excluded, Juventus' implied bargaining weight decreases from 75.6% to 63.0%, while Roma's weight increases correspondingly from 24.4% to 37.0%. Stade Rennais' bargaining weight remains unchanged at 71.4%, since no equivalent clause was identified in Doué's transfer. Under this conservative specification, Juventus obtains a bargaining weight approximately 8.4 percentage points lower than Rennes.

The comparison is therefore highly sensitive to the treatment of the sell-on clause. Once this component, whose future realisation is particularly uncertain, is excluded and the analysis is restricted to the more immediately observable and economically secure elements of the transactions, the results become more closely aligned with the expected relationship between financial constraints and bargaining power. Under this conservative specification, Juventus obtains a lower implied bargaining weight than Stade Rennais, suggesting that the financially constrained seller appropriated a smaller share of the bargaining surplus. Although this result does not eliminate the uncertainty inherent in the model, it indicates that the apparent advantage obtained by Juventus in the baseline specification is largely driven by the estimated value attributed to a contingent future right rather than by the guaranteed terms of the transaction.

Although Soulé and Doué were selected on the basis of their broadly comparable age, development stage, attacking profile and transfer timing, the two transactions are not perfectly equivalent. Differences in player valuation, buyer financial capacity, sporting context and the scale of the respective transfer packages may also have influenced the observed distribution of surplus. The results should therefore be interpreted as comparative case evidence rather than as a controlled estimate of the isolated causal effect of financial constraints. Subject to this qualification, the analysis now proceeds to the second matched pair.

4.2 Pair 2: Rayan Cherki and Ernest Poku

4.2.1 Selection and comparability of the matched pair

The second matched pair compares the permanent transfers of Rayan Cherki from Olympique Lyonnais to Manchester City and Ernest Poku from AZ Alkmaar to Bayer Leverkusen, completed on 10 June and 12 August 2025, respectively. Both players were 21 years old at the time of their transfers and had developed within the youth structures of their selling clubs before becoming established members of the senior squad. Cherki, a product of Lyon's academy, was primarily deployed as an attacking midfielder but was also capable of operating from wide positions. Poku had progressed through the AZ academy since 2019 and was predominantly used as a winger, with his pace and dribbling ability representing central features of his attacking profile (AZ, 2025; Man City Editorial, 2025).

Both transactions involved young, academy-developed attacking players transferred during the same summer window to clubs competing at the upper end of major European leagues. Both were valued principally for their technical ability, creativity and potential for further development. The pairing therefore provides a reasonable comparison between transfers involving players at a similar age and stage of their sporting careers, while recognising that Cherki had accumulated considerably more senior-level experience than Poku.

The principal contrast between the cases concerns the financial position of the selling clubs. At the time of Cherki's transfer, Olympique Lyonnais was already subject to severe measures imposed by the Direction Nationale du Contrôle de Gestion. In November 2024, the DNCG placed the club's wage bill under supervision, prohibited it from recruiting and imposed a provisional relegation at the end of the season (LFP, 2024b). These restrictions were therefore already in force when the transfer to Manchester City was negotiated. On 24 June 2025, approximately two weeks after Cherki's departure, the DNCG formally ordered Lyon's relegation to Ligue 2, although this decision was subsequently overturned on appeal (LFP, 2025a). The later reversal does not alter the fact that the club was operating under acute regulatory and liquidity pressure at the date of the transaction.

The sale of Cherki should consequently be assessed against a context in which Lyon faced not merely adverse accounting indicators but direct regulatory restrictions affecting its wage expenditure, recruitment activity and continued participation in the French top division. The proximity between the transfer and the DNCG's relegation decision further corroborates the severity of the club's financial position, although the decision itself post-dated the transaction

and should therefore be treated as supporting evidence rather than as a condition directly governing the negotiation.

AZ Alkmaar faced no comparable immediate financial pressure at the time of Poku's transfer. Its 2024/25 accounts reported a net profit of €10.4 million, equity of €82.3 million and a solvency ratio of 58%. The club also maintained a positive liquidity position, reported no breach of financing covenants and had not drawn on an available €12 million credit facility. Although transfer income remained relevant to its business model, AZ stated that its financing needs had become less dependent on future player sales (A.Z. Holding B.V., 2025). These indicators support its classification as the non-constrained comparison seller within the pair.

4.2.2 Rayan Cherki: transaction and model inputs

Rayan Cherki's permanent transfer from Olympique Lyonnais to Manchester City was completed on 10 June 2025. Manchester City confirmed that the player had signed a five-year contract, valid until 30 June 2030 (Man City Editorial, 2025). Lyon officially disclosed that the transaction amounted to €42.5 million, including €6 million in conditional bonuses, together with a right to 15% of any capital gain generated by a future transfer (Eagle Football Group, 2025). In accordance with the methodological rule under which all quantifiable contractual bonuses are incorporated into the transfer price, the model therefore uses the value of €42.5 million.

Transfermarkt valued Cherki at €45 million in its final market-value update before the transfer, published on 3 June 2025. The latest valuation available at the time of the analysis, published on 3 June 2026, values the player at €90 million, seven days before the first anniversary of the transaction (Transfermarkt, n.d.-i).

Cherki's contract with Lyon was due to expire on 30 June 2026, leaving 385 days remaining at the date of the transfer (Olympique Lyonnais, 2024). Since the residual contractual period was below the two-year reference threshold adopted in the model, the contract factor is calculated as:

$$CF = \left(\frac{385}{730}\right)^{0.485} = 0.733.$$

In line with this, the contract-adjusted value relinquished by Lyon is:

$$CF \times V_s = 0.733 \times 45.000 = €32.985 \text{ million.}$$

Cherki's estimated annual gross fixed salary during his final season at Lyon was €4 million. His estimated annual gross fixed salary following the transfer to Manchester City was £9.36 million, equivalent to approximately €11.059 million when converted at the exchange rate applicable on 10 June 2025 (Capology, n.d.-i).

The future-sale right retained by Lyon applies to 15% of any capital gain generated by a subsequent transfer. The sell-on right is operationalised as:

$$SO = 0.15 \times (90.000 - 42.500) = \text{€}7.125\ million$$

This amount represents the model-estimated value of the contingent contractual right rather than a payment already received by Lyon.

No transaction-specific information concerning the agent fees incurred by either club was identified. The standardised estimation benchmarks established in the methodology are therefore applied:

$$C_s = 0.10 \times 42.500 = \text{€}4.250 \text{ million},$$

$$C_b = 0.03 \times 11.059 = \text{€}0.332 \text{ million}.$$

These amounts are model-based estimates and should not be interpreted as the commissions effectively paid by Lyon or Manchester City.

4.2.3 Ernest Poku: transaction and model inputs

Ernest Poku's permanent transfer from AZ Alkmaar to Bayer 04 Leverkusen was completed on 12 August 2025. Bayer Leverkusen confirmed that the player had signed a five-year contract, valid until 30 June 2030 (Bayer 04 Leverkusen Fußball GmbH, 2025). Neither club officially disclosed the financial terms of the transaction. However, contemporaneous reporting indicated a fixed transfer fee of €10 million and up to €2 million in conditional bonuses (Sky Sport, 2025). In accordance with the methodological rule under which all publicly quantifiable bonuses are incorporated into the transfer price, the model therefore uses a value of €12 million for the transfer fee.

Transfermarkt valued Poku at €4 million at the date of the transfer. At the time of the analysis, the most recent available valuation, published on 27 May 2026, valued the player at €25 million (Transfermarkt, n.d.-c).

Poku's contract with AZ was due to expire on 30 June 2026, leaving 322 days remaining at the transfer date (Sky Sport, 2025). Since the residual contractual period was below the two-year threshold adopted in the model, the contract factor is calculated as:

$$CF = \left(\frac{322}{730}\right)^{0.485} = 0.672.$$

Consequently, the contract-adjusted value relinquished by AZ is given by:

$$CF \times V_s = 0.672 \times 4.000 = €2.688 \text{ million.}$$

Poku's estimated annual gross fixed salary during his final season at AZ was €80,000. Because only 322 days remained on his contract, the wage expenditure avoided by AZ is capped at the remaining contractual period:

$$W_s = 0.080 \times \frac{322}{365} = €0.071 \text{ million.}$$

His estimated annual gross fixed salary following the transfer to Bayer Leverkusen was €940,000 (Capology, n.d.-c).

Poku had been registered with clubs other than AZ during the calendar years preceding his arrival at the club's academy on 1 July 2019. Under Annexe 5 of the FIFA (2024) Regulations on the Status and Transfer of Players, the proportion attributable to these earlier training periods is estimated at approximately 0.875% of the transfer compensation. Applying this percentage to the maximum reported package produces an external solidarity cost of approximately €0.105 million.

Since this proportion is attributable to training clubs other than AZ, it is treated as a deduction from the seller's transfer proceeds.

No transaction-specific agent fees were publicly disclosed. The standardised estimation benchmarks established in the methodological section are consequently applied:

$$C_s = 0.105 + 0.10 \times 12.000 = €1.305 \text{ million,}$$

$$C_b = 0.03 \times 0.940 = €0.028 \text{ million.}$$

These amounts are model-based estimates and should not be interpreted as the commissions effectively paid by AZ or Bayer Leverkusen.

4.2.4 Within-pair comparison

The complete transaction-specific inputs used in the application of the model to Cherki's and Poku's transfers are reported in Appendix B, Tables B1 and B2, respectively. The resulting surpluses and implied bargaining weights are presented in Table 3.

Measure	Cherki: Lyon–Manchester City	Poku: AZ–Bayer Leverkusen
Transfer compensation, P_{obs}	€42.500m	€12.000m
Seller surplus, S_s	€16.390m	€8.078m
Buyer surplus, S_b	€28.984m	€12.032m
Total surplus	€45.374m	€20.110m
Seller bargaining weight, $\hat{\beta}_s$	0.361	0.402
Buyer bargaining weight, $\hat{\beta}_b$	0.639	0.598

Table 3 - Transfer Compensation, Surplus Distribution, and Implied Bargaining Weights for Pair 2

Both transactions generate positive surpluses for the buying and selling clubs and therefore satisfy the individual-rationality condition imposed by the model. Although Cherki's transfer produces a substantially larger total surplus in absolute terms, the relevant measure for the comparative analysis is the proportion of that surplus appropriated by each selling club.

Under the baseline specification, Olympique Lyonnais obtains an implied seller bargaining weight of approximately 36.1%, compared with 40.2% for AZ. The financially constrained seller therefore appropriates approximately 4.1 percentage points less of the estimated bargaining surplus than the non-constrained comparison seller. Unlike the baseline result obtained for the first matched pair, this comparison is consistent with the expected relationship between financial constraints and seller bargaining power.

The future-sale right retained by Lyon is included in the baseline specification because it formed part of the economic consideration negotiated in the transaction. Its estimated value of €7.125 million is nevertheless contingent on Manchester City subsequently transferring Cherki for an amount that generates a positive capital gain. A conservative alternative specification is therefore considered in which the clause is assigned no current economic value.

Treatment of SO	Lyon surplus	Manchester City surplus	Lyon $\hat{\beta}_s$	Difference relative to AZ
Included	€16.390m	€28.984m	0.361	−0.041
Excluded	€9.265m	€36.109m	0.204	−0.198

Table 4 - Sensitivity of the Cherki Transfer Results to the Treatment of the Sell-On Clause

When the sell-on right is excluded, Lyon's implied bargaining weight decreases from 36.1% to 20.4%, while Manchester City's weight increases correspondingly from 63.9% to 79.6%. AZ's bargaining weight remains unchanged at 40.2%, since no equivalent future-sale right was identified in Poku's transfer. Under this conservative specification, the difference between the selling clubs increases from approximately 4.1 to 19.8 percentage points.

The direction of the result is therefore not dependent on the treatment of the sell-on clause. Lyon obtains a lower implied bargaining weight than AZ under both specifications, although the magnitude of the difference is highly sensitive to the economic value assigned to the contingent right.

4.3 Pair 3: Malick Thiaw and Perr Schuurs

4.3.1 Selection and comparability of the matched pair

The third matched pair compares the permanent transfers of Malick Thiaw from FC Schalke 04 to AC Milan and Perr Schuurs from Ajax to Torino, completed on 29 August and 18 August 2022, respectively. Thiaw was 21 years old at the time of the transfer, while Schuurs was 22. Both were young, right-footed centre-backs who moved from clubs in northern European leagues to Serie A during the same summer transfer window. Thiaw had spent seven years within Schalke's development structure before establishing himself in the senior team (FC Schalke 04, 2022a). Schuurs, in turn, had joined Ajax from Fortuna Sittard in 2018 and subsequently made 95 first-team appearances for the Amsterdam club (AFC Ajax, 2022).

At the time of Thiaw's transfer, Schalke could reasonably be classified as a financially constrained seller. The club had recently returned to the Bundesliga following relegation in 2021 but remained engaged in an extensive financial and sporting restructuring process. Its 2021 accounts reported a loss of €17.8 million, total liabilities of €183.5 million and financial liabilities of €140.6 million. Schalke had also reduced its first-team budget from more than €80 million to approximately €20 million, while management stated that the squad restructuring would require several further transfer windows (FC Schalke 04, 2022b).

The club's own announcement of Thiaw's departure provides particularly direct evidence that financial considerations affected the transaction. Schalke stated that it had accepted the transfer because the circumstances made the deal financially advantageous. Its finance director further explained that the transfer compensation enabled the club to meet the financial targets established at the beginning of the window and provided additional room to address other financial challenges. The decision to sell an academy-developed defender who was still considered valuable to the squad was therefore expressly connected to the club's financial requirements (FC Schalke 04, 2022a).

Ajax was in a materially stronger position and can therefore be considered the non-constrained comparison seller. Although the club recorded a €24.3 million net loss in

2021/22, largely associated with the continuing effects of the pandemic and a negative transfer result, it generated revenue of €189.2 million and held equity of €197.6 million, equivalent to 42.6% of total assets. Ajax also reported €20.4 million in cash and an investment portfolio worth €22.6 million. Management considered the club's liquidity and solvency position sufficient to support its continued operation (AFC Ajax NV, 2022).

Ajax had also qualified directly for the 2022/23 UEFA Champions League group stage and had already completed several major outgoing transfers after the financial year-end. The club consequently expected a positive net result for 2022/23. Ajax should not be characterised as entirely unaffected by transfer-market considerations, particularly because its business model regularly incorporates substantial player sales. Nevertheless, its strong equity base, available liquid resources, Champions League participation and capacity to generate major transfer revenues indicate that Schuurs' sale was negotiated under substantially weaker financial pressure than Thiaw's transfer from Schalke.

4.3.2 Malick Thiaw: transaction and model inputs

Malick Thiaw's permanent transfer from FC Schalke 04 to AC Milan was completed on 29 August 2022. Both clubs confirmed the permanent transfer, while AC Milan announced that the player had signed a contract valid until 30 June 2027 (AC Milan, 2022). Schalke did not disclose the transfer fee, but contemporaneous reporting identified a fixed payment of €5 million and up to €2 million in bonuses (Sky Sport, 2022). In accordance with the model's treatment of publicly quantifiable bonuses, the transfer compensation is therefore set at €7 million.

Transfermarkt valued Thiaw at €6 million at the date of the transfer. The first relevant valuation published after the first anniversary of the transaction valued him at €30 million (Transfermarkt, n.d.-e).

Thiaw's contract with Schalke was due to expire on 30 June 2024 (FC Schalke 04, 2020). At the transfer date, 671 days therefore remained on the agreement. Since this residual duration was below the two-year reference threshold, the contract factor is calculated as:

$$CF = \left(\frac{671}{730}\right)^{0.485} = 0.960$$

The contract-adjusted value relinquished by Schalke is:

$$CF \times V_s = 0.960 \times 6.000 = €5.760 \text{ million}$$

Public reporting estimated Thiaw's annual gross fixed salary at Schalke to be approximately €750,000 (Luik, 2021). His estimated annual gross fixed salary following the transfer to AC Milan was approximately €1.030 million (Capology, n.d.-e).

Subsequent reporting indicates that Schalke retained a right to 10% of the capital gain generated by a future transfer of Thiaw (Klemm et al., 2025). Applying the model's standardised treatment, the estimated value of this contingent right is calculated as:

$$SO = 0.10 \times (30.000 - 7.000) = €2.300 \text{ million}$$

Thiaw joined Schalke from Borussia Mönchengladbach on 1 July 2015. Under the FIFA (2024) solidarity mechanism, the training periods attributable to clubs preceding Schalke are estimated to correspond to the calendar years 2013 and 2014, together with approximately half of 2015. The external solidarity percentage is therefore estimated as:

$$0.25\% + 0.25\% + 0.125\% = 0.625\%$$

Applied to the maximum reported transfer package:

$$SC_s = 0.00625 \times 7.000 = €0.044 \text{ million}$$

This amount represents the estimated proportion of the solidarity contribution attributable to training clubs other than Schalke.

No transaction-specific information concerning the agent fees incurred by either club was identified. The standardised estimation benchmarks established in the methodology are therefore applied. The estimated costs are:

$$C_s = 0.1 \times 7.000 + 0.044 = €0.744 \text{ million}$$

$$C_b = 0.03 \times 1.030 = €0.031 \text{ million}$$

These amounts are model-based estimates and should not be interpreted as the commissions or costs effectively paid by Schalke or AC Milan.

4.3.3 Perr Schuurs: transaction and model inputs

Perr Schuurs's permanent transfer from Ajax to Torino was completed on 18 August 2022. Torino officially confirmed the signing, while Ajax disclosed fixed transfer compensation of €9 million and variable payments capable of increasing the total amount to €11.3 million (AFC Ajax, 2022). In accordance with the methodological rule under which all publicly quantifiable bonuses are included, the model assigns a value of €11.3 million.

Transfermarkt valued Schuurs at €7 million at the time of the transfer. The first relevant observation available after the first anniversary of the transaction valued him at €25 million (Transfermarkt, n.d.-h).

Schuurs's contract with Ajax was due to expire on 30 June 2025 (AFC Ajax, 2022). At the transfer date, the agreement therefore had 1,047 days remaining. Since this residual contractual period exceeded the two-year threshold adopted in the model, no contractual discount is applied.

Schuurs's estimated annual gross fixed salary during his final season at Ajax was €500,000. Following his transfer, his estimated annual gross fixed salary at Torino increased to €1.790 million (Capology, n.d.-h).

Reports indicated that Ajax retained a right relating to a future resale of Schuurs, with Italian reporting identifying the percentage as 15% (Sky Sport, 2022). Unlike the clauses identified in the Soulé and Cherki cases, the available reports describe this as a percentage of the future resale value rather than expressly limiting it to the capital gain. The baseline specification therefore applies the reported percentage directly to V_b:

$$SO = 0.15 \times 25.000 = €3.750 \text{ million}$$

Schuurs was registered with clubs preceding Ajax throughout the calendar years of his 12th to 18th birthdays. Although his first Ajax contract became effective on 1 January 2018, he remained on loan at Fortuna Sittard until the conclusion of the 2017/18 season. The external training period therefore also includes approximately half of the calendar year of his 19th birthday (Transfermarkt, n.d.-h).

Under Annexe 5 of the FIFA (2024) Regulations on the Status and Transfer of Players, each complete calendar year between the player's 12th and 15th birthdays corresponds to 0.25% of the transfer compensation, while each subsequent complete calendar year corresponds to 0.50%, calculated proportionally for periods shorter than one year. The proportion attributable to clubs other than Ajax is estimated as:

$$\text{SC\%} = 4 \times 0.25\% + 3 \times 0.50\% + 0.5 \times 0.50\% = 2.750\%$$

Applied to the maximum reported transfer package:

$$SC_s = 0.0275 \times 11.300 = €0.311 \text{ million}$$

When Schuurs joined Ajax from Fortuna Sittard in 2018, his former club reportedly retained a right to 15% of the capital gain generated by a future transfer (VoetbalPrimeur, 2022).

Using the reported original acquisition cost of €2 million and the maximum transfer package received from Torino, the estimated payment due to Fortuna Sittard is:

$$FSC = 0.15 \times (11.300 - 2.000) = €1.395\, million$$

No transaction-specific information concerning the agent fees incurred by either club was identified. The standardised estimation benchmarks established in the methodology are therefore applied. The estimated costs are as follows:

$$C_s = 0.1 \times 11.300 + 0.311 + 1.395 = €2.836 \text{ million}$$

$$C_b = 0.03 \times 1.790 = €0.054 \text{ million}$$

These amounts are model-based estimates and should not be interpreted as the costs or commissions effectively paid by Ajax or Torino.

4.3.4 Within-pair comparison

The complete transaction-specific inputs used in the application of the model to Thiaw's and Schuurs's transfers are reported in Appendix C, Tables C1 and C2, respectively. The resulting surpluses and implied bargaining weights are presented in Table 5.

Measure	Thiaw: Schalke–AC Milan	Schuurs: Ajax–Torino
Transfer compensation, P_{obs}	€7.000m	€11.300m
Seller surplus, S_s	€3.546m	€5.714m
Buyer surplus, S_b	€19.639m	€8.106m
Total surplus	€23.185m	€13.820m
Seller bargaining weight, $\hat{\beta}_s$	0.153	0.413
Buyer bargaining weight, $\hat{\beta}_b$	0.847	0.587

Table 5 - Transfer Compensation, Surplus Distribution, and Implied Bargaining Weights for Pair 3

Both transactions generate positive surpluses for the buying and selling clubs and therefore satisfy the individual-rationality condition imposed by the model. Thiaw's transfer produces a larger total surplus, primarily because of the substantial increase between his initial and post-transfer market values. However, the relevant measure for the comparative analysis is the proportion of total surplus appropriated by each selling club.

Under the baseline specification, Schalke obtains an implied seller bargaining weight of approximately 15.3%, compared with 41.3% for Ajax. The financially constrained seller therefore obtains an implied bargaining weight approximately 26.1 percentage points lower than that of the non-constrained comparison seller. The baseline result is consequently consistent with the expected negative relationship between financial constraints and seller bargaining power.

Both transfers nevertheless include reported future-sale rights. Schalke reportedly retained a right to 10% of the capital gain generated by a future transfer of Thiaw, while Ajax reportedly retained 15% of the proceeds from a future resale of Schuurs. Since neither right represented a guaranteed payment at the time of the original transactions, a conservative alternative specification is considered in which both sell-on components are assigned no current economic value.

Treatment of SO	**Schalke $\hat{\beta}_s$**	**Ajax $\hat{\beta}_s$**	**Difference: Schalke–Ajax**
Both included	0.153	0.413	−0.261
Both excluded	0.054	0.142	−0.088

Table 6 - Sensitivity of the Pair 3 Results to the Treatment of Sell-On Rights

When both sell-on rights are excluded, Schalke's seller surplus decreases from €3.546 million to €1.246 million, while Ajax's decreases from €5.714 million to €1.964 million. The corresponding seller bargaining weights fall to 5.4% and 14.2%, respectively. The difference between the selling clubs therefore narrows from approximately 26.1 to 8.8 percentage points.

The direction of the result is maintained under the conservative specification applied symmetrically to both transfers. Schalke obtains a lower implied bargaining weight than Ajax whether both sell-on rights are included or both are excluded. The magnitude of the difference is nevertheless highly sensitive to their treatment. This is partly explained by the different structures attributed to the clauses: Schalke's right is applied only to an estimated future capital gain, whereas Ajax's reported right is applied to the full estimated resale value.

4.4 Pair 4: Moise Kean and Liam Delap

4.4.1 Selection and comparability of the matched pair

The fourth matched pair compares the permanent transfers of Moise Kean from Juventus to Fiorentina and Liam Delap from Manchester City to Ipswich Town, completed on 9 and 13 July 2024, respectively. Kean was 24 years old at the time of the transaction, while Delap was 21. Both were strikers who had developed within the youth structures of their selling clubs before progressing to senior football. Kean joined Juventus' academy in 2010 and made his Serie A debut for the club at the age of 16 (Juventus, 2024h), while Delap spent five years within Manchester City's development structure after joining the club in 2019 (Man City Editorial, 2024).

At the beginning of the 2024 summer transfer window, Juventus could reasonably be classified as a financially constrained seller. The club subsequently reported a net loss of €199.2 million for the 2023/24 financial year, with the absence of UEFA competition revenues affecting its financial performance (Juventus, 2024d). The scale of the loss, combined with the regulatory and financial difficulties already discussed in Pair 1, indicates that the club found itself under significant financial pressure.

Manchester City constitutes a wholly different case. Its 2023/24 accounts reported record revenues of £715.0 million paired with a profit of £73.8 million. The club combined sustained profitability with highly profitable player trading activity, supported by £139.0 million in profits from player sales (Manchester City Football Club Limited, 2024). This provides a clear contrast with Juventus and supports Manchester City's classification as the non-constrained seller in the pair.

4.4.2 Moise Kean: transaction and model inputs

Moise Kean's permanent transfer from Juventus to Fiorentina was completed on 9 July 2024. Juventus officially disclosed fixed transfer compensation of €13 million, payable over four financial years, together with variable bonuses of up to €5 million (Juventus, 2024b). In accordance with the methodological rule under which all publicly quantifiable bonuses are incorporated into the transfer price, the model therefore assigns it a value of €18 million.

Transfermarkt valued Kean at €14 million at the time of the transfer. The first relevant valuation available after the first anniversary of the transaction valued him at €45 million, with the update published on 23 December 2025 (Transfermarkt, n.d.-g).

Kean's contract with Juventus was due to expire on 30 June 2025, leaving 356 days remaining at the transfer date (Juventus, 2024e). Since this residual contractual period was below the two-year reference threshold, the contract factor is calculated as:

$$CF = \left(\frac{356}{730}\right)^{0.485} = 0.706$$

The contract-adjusted value relinquished by Juventus is:

$$CF \times V_s = 0.706 \times 14.000 = €9.884 \text{ million}$$

Kean's estimated annual gross fixed salary during his final season at Juventus was €3.85 million. Because less than one year remained on his contract, the wage saving is capped at the residual contractual period:

$$W_s = 3.850 \times \frac{356}{365} = €3.755 \text{ million.}$$

His estimated gross fixed salary during his first season at Fiorentina was €2.82 million per year (Capology, n.d.-g).

No reliable public information indicating that Juventus retained a future sell-on right in the transaction was identified.

Kean had spent periods away from Juventus on loan at Hellas Verona and Paris Saint-Germain and had also been registered with Everton before returning to Juventus (Transfermarkt, n.d.-g). These periods generate solidarity entitlements for clubs other than the selling club. Based on the publicly observable registration periods, the external solidarity share is estimated at approximately 1.45% of the transfer compensation.

Applied to the maximum €18 million package:

$$SC_s = 0.0145 \times 18.000 = €0.261\, million$$

No transaction-specific agent fees were publicly disclosed. The standardised estimation benchmarks established in the methodology are therefore applied. The estimated costs are:

$$C_s = 0.1 \times 18.000 + 0.261 = €2.061\, million$$

$$C_b = 0.03 \times 2.820 = €0.085\, million$$

These amounts are model-based estimates and should not be interpreted as the costs or commissions effectively paid by Juventus or Fiorentina.

4.4.3 Liam Delap: transaction and model inputs

Liam Delap's permanent transfer from Manchester City to Ipswich Town was completed on 13 July 2024. Manchester City officially confirmed the player's permanent departure, while contemporaneous reporting identified an initial transfer fee of £15 million and up to £5 million in additional payments. The transaction also included a 20% sell-on right in favour of Manchester City (Sky Sports, 2024). In accordance with the methodological rule under which all publicly quantifiable bonuses are incorporated into the transfer price, the model therefore uses the maximum reported package of £20 million.

Using the GBP/EUR exchange rate applicable on 12 July 2024, the final working day preceding the transfer, of £1 = €1.1885 (Exchange Rates UK, n.d.):

$$P_{obs} = 20.000 \times 1.1885 = €23.770\, million$$

Transfermarkt valued Delap at €8 million at the date of the transaction. The most recent market-value observation available close to the first anniversary of the transfer, published on 30 May 2025, valued him at €40 million (Transfermarkt, n.d.-d).

Delap's Manchester City contract was due to expire on 30 June 2026. The club had previously confirmed that his 2021 extension kept him under contract until the summer of 2026 (Man City Editorial, 2021). At the transfer date, 717 days therefore remained on the agreement. Since this residual contractual period was slightly below the two-year reference threshold adopted in the model, the contract factor is calculated as:

$$CF = \left(\frac{717}{730}\right)^{0.485} = 0.991$$

The contract-adjusted value relinquished by Manchester City is:

$$CF \times V_s = 0.991 \times 8.000 = €7.928 \text{ million}$$

Delap's estimated annual gross fixed salary during his 2023/24 loan spell at Hull City was £620,000. This figure is used as the best publicly available proxy for the wage obligation associated with his Manchester City contract immediately before the permanent transfer. Converted at the same exchange rate:

$$W_s = 0.620 \times 1.1885 = €0.737\ million$$

Following his transfer, Delap's estimated annual gross fixed salary at Ipswich Town was £1.04 million (Capology, n.d.-d):

$$W_b = 1.040 \times 1.1885 = €1.236\ million$$

Contemporaneous reporting identified a 20% sell-on right in favour of Manchester City. Subsequent reporting clarified that the clause applied to any capital gain generated by Ipswich above the £20 million acquisition cost rather than to the entire proceeds of a future resale (Stone, 2025). Consistent with the treatment adopted for other contingent sell-on rights in the model, the clause is valued as:

$$SO = 0.20 \times (40.000 - 23.770) = €3.246\ million$$

Delap spent approximately ten years within Derby County's academy before joining Manchester City in 2019. As a result, part of the FIFA solidarity contribution attributable to his earlier training period belongs to Derby rather than Manchester City. Delap was registered outside Manchester City throughout the calendar years corresponding to his 12th to 15th birthdays and for approximately half of the calendar year of his 16th birthday. The external solidarity share is therefore estimated at approximately 1.25% of the maximum transfer package:

$$SC_s = 0.0125 \times 23.770 = €0.297\,million$$

Reporting surrounding the transaction also indicates that Derby County had retained a sell-on entitlement when Delap moved to Manchester City in 2019 (TWTD, 2024). However, the precise percentage and transaction-specific amount were not publicly disclosed. This component is therefore acknowledged but is not incorporated quantitatively into the model.

No transaction-specific agent fees were publicly disclosed. The standardised estimation benchmarks established in the methodology are therefore applied. After including the external solidarity cost, the quantifiable transaction costs are:

$$C_s = 0.1 \times 23.770 + 0.297 = €2.674\,million$$

$$C_b = 0.03 \times 1.236 = €0.037\,million$$

These amounts are model-based estimates and should not be interpreted as the costs or commissions effectively paid by Manchester City or Ipswich Town. The unquantified Derby County sell-on obligation means that the seller-side costs included in the baseline specification may be slightly understated.

4.4.4 Within-pair comparison

The complete transaction-specific inputs used in the application of the model to Kean's and Delap's transfers are reported in Appendix D, Tables D1 and D2, respectively. The resulting surpluses and implied bargaining weights are presented in Table 7.

Measure	Kean: Juventus–Fiorentina	Delap: Manchester City–Ipswich
Transfer compensation, P_{obs}	€18.000m	€23.770m
Seller surplus, S_s	€9.810m	€17.151m
Buyer surplus, S_b	€24.095m	€11.711m
Total surplus	€33.905m	€28.862m
Seller bargaining weight, $\hat{\beta}_s$	0.289	0.594
Buyer bargaining weight, $\hat{\beta}_b$	0.711	0.406

Table 7 - Transfer Compensation, Surplus Distribution, and Implied Bargaining Weights for Pair 4

Both transactions generate positive surpluses for the selling and acquiring clubs and therefore satisfy the individual-rationality condition of the model. Juventus obtains an estimated seller surplus of €9.810 million from Kean's transfer, while Manchester City obtains €17.151 million from Delap's. The corresponding implied seller bargaining weights are 28.9% and 59.4%, respectively.

The comparison therefore produces a difference of approximately 30.5 percentage points in favour of Manchester City. The financially constrained seller consequently appropriates a

substantially smaller share of the estimated bargaining surplus than the non-constrained comparison seller. Pair 4 therefore provides particularly clear support for the expected negative relationship between seller financial constraints and bargaining power.

A relevant source of uncertainty concerns Manchester City's reported 20% sell-on right. Since the clause had not generated a payment at the time of the original transaction, its value is estimated using Delap's subsequent market valuation rather than a realised resale. A conservative specification therefore assigns no economic value to the clause while leaving Kean's transaction unchanged, as no comparable sell-on right was identified.

Treatment of SO	**Manchester City surplus**	**Ipswich Town surplus**	**Manchester City $\hat{\beta}_s$**	**Difference relative to Juventus**
Included	€17.151m	€11.711m	0.594	+0.305
Excluded	€13.905m	€14.957m	0.482	+0.192

Table 8 - Sensitivity of the Delap Transfer Results to the Treatment of the Sell-On Clause

When the sell-on right is excluded, Manchester City's seller surplus decreases from €17.151 million to €13.905 million, while Ipswich's buyer surplus increases by the same amount. The total estimated bargaining surplus therefore remains unchanged at €28.862 million. Manchester City's implied seller bargaining weight falls from 59.4% to 48.2%.

The direction of the result nevertheless remains unchanged. Even under the more conservative specification, Manchester City retains an implied bargaining weight approximately 19.2 percentage points higher than Juventus. The conclusion of the matched-pair comparison therefore does not depend on the valuation assigned to Delap's contingent sell-on clause.

The analysis is subject to one further limitation. Reporting indicates that Derby County retained an entitlement connected to Delap's earlier move to Manchester City, but the amount payable from the Ipswich transaction could not be reliably quantified. Its exclusion may therefore modestly overstate Manchester City's seller surplus. However, given the magnitude of the observed difference between the two seller bargaining weights, this limitation does not appear sufficient, on its own, to alter the qualitative result.

4.5 Pair 5: Dean Huijsen and Zeno Debast

4.5.1 Selection and comparability of the matched pair

The final pair compares the permanent transfers of two young centre-backs, Dean Huijsen and Zeno Debast during the 2024 summer transfer window. Huijsen joined Bournemouth

from Juventus on 30 July 2024 at the age of 19, while Debast completed his move from Anderlecht to Sporting CP on 4 July 2024 at the age of 20. The two cases are particularly comparable in terms of age, position, transfer timing and transaction magnitude. Both players were right-footed central defenders with significant development potential and were transferred within the same month of the same summer window. Huijsen had joined Juventus from Málaga in 2021 and progressed through the club's youth structure before reaching the first team (Juventus, 2024f), while Debast was a product of Anderlecht's academy and had already established himself in the Belgian senior national team (RSC Anderlecht, 2024b).

The principal distinction between the cases concerns the financial circumstances of the selling clubs. As discussed previously in the analysis of Juventus's financial position, the club entered the 2024 summer transfer window under substantial financial and regulatory pressure. Since Huijsen's transfer occurred during the same window and under the same underlying financial conditions, Juventus is again classified as the financially constrained seller in this pair.

RSC Anderlecht presents a materially different financial context. The club reported a net profit of approximately €1.59 million for the 2023/24 season despite not participating in European competition. Anderlecht also stated that revenue, net results and equity had improved for a third consecutive year. Importantly, the proceeds from Debast's transfer were not included in those accounts and would only be recognised in the following financial year, meaning that the positive result was achieved independently of his sale (RSC Anderlecht, 2024a). This supports the interpretation that Anderlecht was not facing a comparable immediate need to dispose of the player and therefore provides an appropriate non-constrained comparison seller.

4.5.2 Dean Huijsen: transaction and model inputs

Dean Huijsen's permanent transfer from Juventus to AFC Bournemouth was completed on 30 July 2024. Juventus officially disclosed fixed compensation of €15.2 million, payable over five financial years, together with variable bonuses of up to €3 million (Juventus, 2024a). Under the same treatment applied throughout the analysis, the maximum quantifiable package of €18.2 million is used.

Transfermarkt valued Huijsen at €10 million immediately before the transfer. The first market-value update published after the first anniversary of the transaction valued him at €70

million in October 2025 (Transfermarkt, n.d.-a). In accordance with the standardised observation rule established in the methodology, this value is therefore used as V_b.

Huijsen had renewed his Juventus contract in June 2023 until 30 June 2027 (Juventus, 2023). Consequently, 1,065 days remained on his contract at the date of the Bournemouth transfer. Since this exceeds the two-year threshold adopted in the model, no contractual discount is applied.

Huijsen's estimated gross fixed annual salary during the 2023/24 season was €0.740 million. At Bournemouth, his estimated gross fixed annual salary was £1.56 million (Capology, n.d.-a). Using the exchange rate on 30 July 2024 of £1 = €1.1869 (Exchange Rates UK, n.d.):

$$W_b = 1.560 \times 1.1869 = €1.852\ million$$

Reporting on the transaction indicated that Juventus also retained a 10% sell-on right over the capital gain generated by a subsequent transfer (Young, 2025). Consistent with the treatment of unrealised sell-on clauses elsewhere in the analysis, its economic value is estimated using V_b, rather than incorporating any subsequent actual transfer:

$$SO = 0.10 \times (70.000 - 18.200) = €5.180\ million$$

This represents the estimated value assigned to the contingent right within the model and not a realised payment.

Huijsen spent his formative years at Málaga before joining Juventus in July 2021 at the age of 16 (Juventus, 2024f). Under FIFA's solidarity mechanism, the portion attributable to clubs preceding Juventus is estimated at approximately 1.25%:

$$SC_s = 0.0125 \times 18.200 = €0.228\ million$$

No transaction-specific agent fees were publicly disclosed. The standardised estimation benchmarks established in the methodology are therefore applied. After including the external solidarity cost, the quantifiable transaction costs are:

$$C_s = 0.1 \times 18.200 + 0.228 = €2.048\ million$$

$$C_b = 0.03 \times 1.852 = €0.056\ million$$

These amounts are model-based estimates and should not be interpreted as the costs or commissions effectively paid by Juventus or Bournemouth.

4.5.3 Zeno Debast: transaction and model inputs

Zeno Debast's permanent transfer from RSC Anderlecht to Sporting CP was completed on 4 July 2024. Sporting's official market disclosure provides unusually detailed information on

the transaction: the club agreed to pay €15.55 million in fixed compensation, together with up to €5.5 million in conditional bonuses (Sporting Clube de Portugal – Futebol, SAD [Sporting], 2024). The maximum nominal transfer package used in the model is therefore €21.05 million.

Transfermarkt valued Debast at €18 million around the time of his transfer. His value subsequently increased to €30 million on 18 December 2025, the first available valuation after the first anniversary of the transaction (Transfermarkt, n.d.-j).

Debast had extended his Anderlecht contract until 2025, leaving approximately 361 days on the agreement when he joined Sporting. Anderlecht subsequently referred to Debast as having had one year remaining on his contract at the time of the transfer (RSC Anderlecht, 2022). Since the residual contractual period was below the two-year threshold, the contract factor is:

$$CF = \left(\frac{361}{730}\right)^{0.485} = 0.711$$

The contract-adjusted value relinquished by Anderlecht is:

$$CF \times V_s = 0.711 \times 18.000 = €12.798\ million$$

Capology (n.d.-j) estimates Debast's gross fixed annual salary at Anderlecht during 2023/24 at approximately €60,000. Since slightly less than one full year remained on his contract, the seller-side wage saving is capped at the remaining contractual period.

$$Ws = 0.060 \times \frac{361}{365} = €0.059\ million$$

Capology (n.d.-j) also estimates his gross fixed salary at Sporting during 2024/25 at €1 million per year.

The transfer agreement also granted Anderlecht a right to 15% of the capital gain generated by a future transfer of Debast. The percentage may subsequently be reduced to as little as 10%, either at Sporting's option or following the achievement of specified objectives (Sporting, 2024). For consistency with the baseline treatment of other sell-on clauses, the initial 15% contractual percentage is used.

$$SO = 0.15 \times (30.000 - 21.050) = €1.343\ million$$

Sporting's disclosure additionally states that no solidarity mechanism was due to third clubs in the transaction (Sporting, 2024). This is consistent with Debast having spent essentially his entire FIFA-relevant training period within Anderlecht's academy. No external solidarity cost is therefore incorporated.

No seller-side intermediation fee paid by Anderlecht was publicly identified. The standardised 10% benchmark is consequently retained. On the buyer side, however, there is no need to apply the standard 3% agent-fee benchmark. Sporting officially disclosed intermediation expenses of €775,000 associated with the transaction. The observed value therefore replaces the model estimate:

$$C_s = 0.10 \times 21.050 = €2.105\ million$$

$$C_b = €0.775\ million$$

The seller-side amount is a model-based estimate and should not be interpreted as the costs or commissions effectively paid by Anderlecht.

4.5.4 Within-pair comparison

The complete transaction-specific inputs used in the application of the model to Huijsen's and Debast's transfers are reported in Appendix E, Tables E1 and E2, respectively. The resulting surpluses and implied bargaining weights are presented in Table 9.

Measure	Huijsen: Juventus–Bournemouth	Debast: Anderlecht–Sporting
Transfer compensation, P_{obs}	€18.200m	€21.050m
Seller surplus, S_s	€12.073m	€7.549m
Buyer surplus, S_b	€44.713m	€5.833m
Total surplus	€56.785m	€13.381m
Seller bargaining weight, $\hat{\beta}_s$	0.213	0.564
Buyer bargaining weight, $\hat{\beta}_b$	0.787	0.436

Table 9 - Transfer Compensation, Surplus Distribution, and Implied Bargaining Weights for Pair 5

Both transactions generate positive surpluses for the selling and acquiring clubs and therefore satisfy the individual-rationality condition imposed by the model. Huijsen's transfer generates a substantially larger total estimated surplus, primarily reflecting the pronounced increase in his post-transfer market valuation.

Under the baseline specification, Juventus obtains an implied seller bargaining weight of approximately 21.3%, compared with 56.4% for Anderlecht. The financially constrained seller therefore obtains an implied bargaining weight approximately 35.2 percentage points lower than that of the non-constrained comparison seller.

Both transactions include contingent future-sale rights. Juventus reportedly retained a right to 10% of the capital gain generated by a future transfer of Huijsen, while Anderlecht retained an initial right to 15% of the capital gain generated by a subsequent transfer of Debast. Since neither right constituted a guaranteed payment at the time of the original transactions, a

conservative alternative specification is considered in which both sell-on components are assigned no current economic value.

Treatment of SO	Juventus $\hat{\beta}_s$	Anderlecht $\hat{\beta}_s$	Difference: Juventus–Anderlecht
Both included	0.213	0.564	−0.352
Both excluded	0.121	0.464	−0.342

Table 10 - Sensitivity of the Pair 5 Results to the Treatment of Sell-On Rights

When both sell-on rights are excluded, Juventus' seller surplus decreases from €12.073 million to €6.893 million, while Anderlecht's decreases from €7.549 million to €6.206 million. The corresponding buyer surpluses increase by the same amounts, leaving the total estimated surplus of each transaction unchanged. Juventus's implied seller bargaining weight consequently falls from 21.3% to 12.1%, while Anderlecht's decreases from 56.4% to 46.4%.

The direction and magnitude of the comparison remain stable under the conservative specification. Juventus continues to obtain a substantially lower implied bargaining weight than Anderlecht, with the difference narrowing only slightly from approximately 35.2 to 34.2 percentage points.

The two transactions nevertheless differ in the absolute scale of the estimated surplus and in the players' subsequent market-value trajectories. Huijsen experienced a particularly large increase in market value following his move to Bournemouth, while Debast's appreciation was more moderate. These differences may influence the absolute surpluses generated by the model. However, the matched-pair comparison is based on the relative division of those surpluses, and the substantial gap between the two sellers' bargaining weights persists under both specifications.

4.6 Cross-pair Comparison

Table 11 summarises the implied seller bargaining weights obtained under the baseline specification across the five matched pairs.

Pair	Financially constrained seller	$\hat{\beta}_s$	Comparison seller	$\hat{\beta}_s$	Difference
1	Juventus	0.755	Rennes	0.714	+0.042
2	Lyon	0.361	AZ	0.402	−0.041
3	Schalke	0.153	Ajax	0.413	−0.261
4	Juventus	0.289	Manchester City	0.594	−0.305
5	Juventus	0.213	Anderlecht	0.564	−0.352

Table 11 - Cross-Pair Comparison of Implied Seller Bargaining Weights

The baseline results display a clear, although not perfectly uniform, pattern across the five matched pairs. In four of the five comparisons, the financially constrained seller obtains a

lower implied bargaining weight than the corresponding non-constrained seller. The absolute differences range from 4.1 percentage points in the Lyon–AZ comparison to approximately 35.2 percentage points in the Juventus–Anderlecht comparison. Pair 1 constitutes the only exception: Juventus obtains an implied bargaining weight of 75.5%, compared with 71.4% for Rennes, producing a positive difference of approximately 4.2 percentage points. As discussed in the within-pair analysis, however, this result is particularly sensitive to the estimated value assigned to Juventus' contingent sell-on right in the Soulé transaction.

The conservative specification provides a stronger indication of a common pattern. When contingent sell-on rights are assigned no current economic value, the financially constrained seller obtains the lower implied bargaining weight in all five matched pairs.

Pair	**Financially constrained seller**	$\hat{\beta}_s$	**Comparison seller**	$\hat{\beta}_s$	**Difference**
1	Juventus	0.630	Rennes	0.714	−0.084
2	Lyon	0.204	AZ	0.402	−0.198
3	Schalke	0.054	Ajax	0.142	−0.088
4	Juventus	0.289	Manchester City	0.482	−0.192
5	Juventus	0.121	Anderlecht	0.464	−0.342

Table 12 - Cross-Pair Comparison of Implied Seller Bargaining Weights: Excluding Sell-On Rights

Under this specification, every within-pair difference is negative, ranging from approximately 8.4 percentage points in Pair 1 to 34.2 percentage points in Pair 5. The reversal in Pair 1 is especially relevant: once Juventus' estimated sell-on value is removed, its implied bargaining weight falls below that of Rennes, bringing the comparison into line with the direction observed in the remaining cases. The conservative results therefore suggest that the overall pattern is not dependent on assigning economic value to uncertain future-sale rights. Rather, the lower implied bargaining weights associated with financially constrained sellers persist when the analysis is restricted to the more immediate components of the transactions.

Taken together, the cross-pair results provide consistent comparative evidence in support of the proposed negative relationship between seller financial constraints and bargaining power. The baseline specification supports this relationship in four of the five pairs, while the conservative specification does so in all five. The magnitude of the estimated differences varies substantially across cases, indicating that financial constraints are unlikely to be the sole determinant of bargaining outcomes. Nevertheless, the persistence of the directional pattern across distinct transactions and its strengthening under the conservative treatment of contingent rights provide the basis for examining the broader implications and limitations of the findings in the following discussion.

5 Discussion of Results

The exploratory multiple-case analysis provides overall evidence consistent with the hypothesised negative relationship between seller financial constraints and bargaining power. Under the baseline specification, the financially constrained seller obtains a lower implied bargaining weight in four of the five pairs, while the conservative specification excluding contingent sell-on rights produces the expected ordering in all five comparisons. The consistency of this directional pattern is particularly relevant given that the cases involve different transfer windows, acquiring clubs, player profiles and absolute levels of bargaining surplus. The results therefore suggest that the association between financial constraints and weaker surplus appropriation is not confined to a single transaction or institutional setting.

This pattern should nevertheless be interpreted in relative rather than absolute terms. The estimated differences in seller bargaining weights vary substantially across the matched pairs. In some cases, such as the Lyon–AZ comparison, the baseline difference is relatively small, whereas the Juventus–Anderlecht comparison produces a gap exceeding thirty percentage points. Similar variation is visible in the remaining pairs. Financial constraints therefore do not appear to determine bargaining outcomes mechanically. Instead, they operate alongside other transaction-specific factors that influence the distribution of the available surplus. These include the player's remaining contractual duration, the evolution of his market value, the financial capacity of the acquiring club, the structure of the transfer package and the presence of contingent contractual rights. The matched-pair design seeks to reduce some of this heterogeneity by comparing broadly similar transactions, but it cannot eliminate it entirely.

The variation across pairs is also consistent with the economic logic underlying the bargaining framework. Financial pressure may weaken the seller's outside position by increasing the relative value of completing a transaction within the relevant transfer window, thereby reducing its ability to reject less favourable terms. However, this mechanism does not operate in isolation. A financially constrained club may still possess substantial bargaining leverage when the player is highly valued, multiple buyers are interested, a long contractual period remains, or the acquiring club places a particularly high value on completing the transaction. Conversely, a financially stable seller may accept a comparatively modest share of the surplus when other dimensions of the negotiation favour the buyer. The estimated bargaining weights should therefore be interpreted as reflecting the interaction between

financial constraints and the broader bargaining environment, rather than as a direct mechanical function of the seller's financial position.

The treatment of contingent sell-on rights provides an important robustness test of this interpretation. These rights formed part of the negotiated economic consideration in several of the transactions and were therefore included in the baseline specification. Their valuation is nevertheless inherently uncertain because their realisation depends on future events that were not guaranteed at the time of the original transfer. The pair-specific sensitivity analyses show that excluding these rights can materially affect the magnitude of the estimated bargaining weights. This is particularly evident in cases where the sell-on component represents a meaningful proportion of the seller's estimated surplus. Nevertheless, the overall directional result does not weaken when the clauses are assigned no current economic value. On the contrary, the conservative specification produces a lower implied seller bargaining weight for the financially constrained club in every matched pair.

This result is important for two reasons. First, it indicates that the principal finding is not driven solely by the model's valuation of uncertain future-sale rights. Second, it highlights the distinction between the direction and magnitude of the estimated relationship. While the direction of the comparison is relatively stable across the sample, the size of the estimated bargaining-power differential is more sensitive to modelling choices and transaction-specific assumptions. The analysis therefore provides stronger support for the proposition that financially constrained sellers tend to appropriate a smaller share of the bargaining surplus than for any claim regarding the precise quantitative size of that disadvantage.

The findings are also broadly consistent with the bargaining logic incorporated into the model. A seller experiencing financial pressure may face a higher opportunity cost of delaying or rejecting a transfer, particularly when immediate liquidity, balance-sheet improvement or compliance with financial requirements is valuable. In such circumstances, the seller may be willing to accept a transaction that leaves a larger proportion of the estimated surplus to the acquiring club. The results obtained for the constrained sellers are compatible with this mechanism: despite the transactions generating positive surplus for both sides, the constrained clubs tend to capture a smaller proportion of that surplus than their matched comparison sellers.

At the same time, the results should not be interpreted as establishing a causal effect of financial constraints on transfer bargaining power. The parameters are implied bargaining

weights derived from the model, rather than directly observed measures of negotiating strength. They depend on the valuation of the relevant surpluses and therefore inherit the assumptions embedded in the construction of V_s, V_b, contractual adjustments, wages, transaction costs and contingent rights. In addition, even carefully selected matched pairs remain imperfect comparisons. Differences in sporting quality, buyer demand, market conditions, contractual structure and strategic objectives cannot be fully controlled through qualitative matching alone.

The evidence is therefore best understood as comparative rather than causal. Across a small set of matched transactions, financially constrained sellers systematically tend to obtain lower implied bargaining weights than otherwise comparable non-constrained sellers, with the pattern becoming fully uniform under the conservative treatment of sell-on rights. This provides comparative empirical support for the proposed relationship while leaving open the possibility that part of the observed variation reflects other determinants of bargaining power. The following section therefore considers the principal methodological and data limitations that affect the interpretation of these estimates.

6 Limitations

The empirical application is subject to some limitations due to both data availability and the modelling choices required to operationalise bargaining surplus. These limitations do not invalidate the comparative exercise, but they constrain the precision with which the estimated bargaining weights can be interpreted.

A first limitation concerns the measurement of player value. The model relies on Transfermarkt market valuations to construct both the pre-transfer value, V_s, and the post-transfer value, V_b. These valuations provide a consistent and publicly available measure across the sample, but they cannot be interpreted as directly observed transaction prices or club-specific valuations. In particular, V_b uses an ex post market valuation as a proxy for the buyer's expected value under the model's perfect-foresight assumption. It may therefore reflect post-transfer developments not foreseeable at negotiation and omits sporting, commercial and strategic dimensions of value. Similar measurement limitations apply to salary estimates obtained from Capology, a publicly available football salary database.

A second source of uncertainty concerns transaction costs. When official disclosures reported intermediary payments or solidarity contributions, these observed values were incorporated directly. In other cases, standardised benchmarks were required to estimate seller- and buyer-side intermediation costs. Consequently, the degree of measurement precision is not identical across transactions. Since these costs enter directly into the construction of the respective surpluses, estimation error may affect the implied bargaining weights, particularly when the total surplus available to one side is relatively limited.

The treatment of contingent transaction components constitutes a further limitation. The analysis includes the maximum quantifiable value of conditional bonuses in transfer compensation even with uncertainty about their eventual payment. This approach improves comparability across transactions but may overstate the consideration ultimately received by the seller if some performance conditions are not achieved. Sell-on rights create an additional valuation problem because they represent contingent claims whose future realisation is uncertain. The baseline approach assigns economic value to these rights using the player's market-value evolution, whereas the conservative specification assigns them no current value, thereby providing a sensitivity analysis of the impact of this uncertain component on the implied bargaining weights in some pairs.

The matched-pair design cannot fully control for the heterogeneity inherent in football transfer negotiations. The selected transactions were matched on observable characteristics intended to improve comparability, but no two negotiations are identical. Bargaining outcomes may also reflect factors that cannot be consistently observed across the sample, such as the number and intensity of competing bids, the player's willingness to move, the seller's sporting objectives, the acquiring club's urgency and the strategic value attributed to the player by each club. The financial condition of the seller should therefore be understood as one potential determinant of bargaining power rather than as the sole explanation for the observed differences.

A related limitation concerns the operationalisation of contractual leverage. The contract factor provides a systematic means of incorporating the remaining duration of the player's employment contract when fewer than two years remain. However, contractual duration is only one dimension of the seller's effective control over the player. Contract renewal prospects, player preferences, release clauses and the credibility of allowing the player to remain until expiry may also influence bargaining leverage but cannot be incorporated consistently across the cases. The contract factor should consequently be interpreted as an approximation of one important component of contractual strength rather than as a complete representation of the seller's outside position.

Most importantly, the estimated bargaining weights are model-implied parameters rather than directly observed measures of negotiating power. Their values depend on the construction of seller and buyer surpluses and therefore inherit the assumptions and measurement uncertainty associated with the underlying inputs. A lower estimated $\hat{\beta}_S$ should accordingly be interpreted as indicating that the seller appropriates a smaller share of the estimated bargaining surplus under the model, rather than as an observation of the real process itself.

Finally, the small and club-concentrated sample limits the extent to which the findings can be generalised beyond the cases examined: three of the five constrained observations involve Juventus in the same 2024 transfer window. This limitation is consistent with the exploratory multiple-case study design, which prioritises detailed comparative analysis over statistical representativeness. The findings should therefore be interpreted as comparative case evidence, with a larger sample required to assess the generality and magnitude of the observed relationship.

7 Conclusion

This dissertation examined whether financial constraints on selling clubs are associated with weaker bargaining positions in football transfers. The analysis adopted an exploratory multiple-case study design structured around five matched pairs and combined it with an adapted Nash bargaining framework, deriving implied bargaining weights from estimated seller and buyer surpluses. In doing so, it aimed to provide an operational approach to bargaining power using transaction-level information.

The results provide broad support for the proposed relationship. Under the baseline specification, the financially constrained seller obtains a lower implied bargaining weight in four of the five matched pairs. When sell-on rights are excluded, the expected ordering is observed in all five comparisons. Although the magnitude of the differences varies across cases, the consistency of the directional pattern suggests that financial pressure may reduce the seller's ability to appropriate the surplus generated by a transfer.

Consistent with the exploratory nature of the study, these findings should be interpreted as comparative rather than causal evidence. The estimated bargaining weights are model-implied and depend on several proxies and assumptions concerning market values, salaries, transaction costs and contingent components. Moreover, the matched-pair design cannot fully eliminate differences in player characteristics, buyer demand, contractual circumstances or market conditions.

Despite these limitations, the dissertation contributes to the analysis of football transfer negotiations by explicitly incorporating the financial position of the selling club into the study of bargaining outcomes. The results suggest that transfer negotiations cannot be understood solely through player characteristics and contractual factors, since the seller's financial condition may also influence the distribution of transaction surplus. The framework therefore offers a basis for examining how club-level financial circumstances interact with other determinants of negotiating leverage.

Future research could extend the analysis to a larger sample, replace the binary constrained–control classification with a continuous measure of financial pressure, and improve the modelling of transaction costs and buyer competition. Overall, the evidence suggests that financial constraints may weaken the selling club's capacity to capture the surplus created by a transfer.

8 Appendix

8.1 Appendix A

Variable	Value	Operational treatment
P_{obs}	€29.6m	Fixed compensation plus all reported bonuses
V_s	€25m	Market value at the transfer date
V_b	€35m	First valuation after the first anniversary
W_s	€0.56m	Estimated gross fixed salary avoided by Juventus
W_b	€3.7m	Estimated gross fixed salary paid by Roma
SO	€0.54m	10% of estimated capital gain above the total transfer package
C_s	€2.96m	Estimated seller-side agent cost
C_b	€0.111m	Estimated buyer-side agent cost
CF	0.980	Contract factor based on 700 remaining days
$CF \times V_s$	€24.500m	Contract-adjusted value relinquished

Table A1 - Input Table Matías Soulé

Variable	Value	Operational treatment
P_{obs}	€70m	Reported €50m fixed fee plus €20m in bonuses
V_s	€30m	Market value at the transfer date
V_b	€90m	First valuation after the first anniversary
W_s	€0.52m	Estimated annual gross fixed salary avoided by Rennes
W_b	€6m	Estimated annual gross fixed salary paid by PSG
C_s	€7m	Estimated seller-side agent cost
C_b	€0.18m	Estimated buyer-side agent cost
CF	0.968	Contract factor based on 682 remaining days
$CF \times V_s$	€29.040m	Contract-adjusted value relinquished

Table A2 - Input Table Désiré Doué

8.2 Appendix B

Variable	Value	Operational treatment
P_{obs}	€42.500m	Reported €36.5m fixed fee plus €6m in bonuses
V_s	€45.000m	Market value immediately before the transfer
V_b	€90.000m	Most recent valuation available closest to the first anniversary
W_s	€4.000m	Estimated annual gross fixed salary avoided by Lyon
W_b	€11.059m	Estimated annual gross fixed salary paid by Manchester City
SO	€7.125m	Estimated value of Lyon's 15% right over a future capital gain
C_s	€4.250m	Estimated seller-side agent cost
C_b	€0.332m	Estimated buyer-side agent cost
CF	0.733	Contract factor based on 385 remaining days

Variable	Value	Operational treatment
$CF \times V_s$	€32.985m	Contract-adjusted value relinquished

Table B1 – Input Table Rayan Cherki

Variable	Value	Operational treatment
P_{obs}	€12.000m	Reported €10m fixed fee plus €2m in bonuses
V_s	€4.000m	Market value at the transfer date
V_b	€25.000m	Most recent valuation available closest to the first anniversary
W_s	€0.071m	Estimated gross salary avoided over the remaining 322 contract days
W_b	€0.940m	Estimated annual gross fixed salary paid by Bayer Leverkusen
C_s	€1.305m	€1.200m estimated agent cost plus €0.105m external solidarity cost
C_b	€0.028m	Estimated buyer-side agent cost
CF	0.672	Contract factor based on 322 remaining days
$CF \times V_s$	€2.688m	Contract-adjusted value relinquished

Table B2 – Input Table Ernest Poku

8.3 Appendix C

Variable	Value	Operational treatment
P_{obs}	€7.000m	Reported €5m fixed fee plus €2m in bonuses
V_s	€6.000m	Market value at the transfer date
V_b	€30.000m	First relevant valuation after the first anniversary
W_s	€0.750m	Estimated annual gross fixed salary avoided by Schalke
W_b	€1.030m	Estimated annual gross fixed salary paid by AC Milan
SO	€2.300m	Estimated value of Schalke's 10% right over a future capital gain
C_s	€0.744m	€0.700m Estimated agent cost plus €0.044m external solidarity cost
C_b	€0.031m	Estimated buyer-side agent cost
CF	0.960	Contract factor based on 671 remaining days
$CF \times V_s$	€5.760m	Contract-adjusted value relinquished

Table C1 - Input Table Malick Thiaw

Variable	Value	Operational treatment
P_{obs}	€11.300m	Reported €9m fixed fee plus €2.3m in bonuses
V_s	€7.000m	Market value at the transfer date
V_b	€25.000m	First relevant valuation after the first anniversary
W_s	€0.500m	Estimated annual gross fixed salary avoided by Ajax
W_b	€1.790m	Estimated annual gross fixed salary paid by Torino
SO	€3.750m	Estimated value of Ajax's 15% right over a future resale
C_s	€2.836m	€1.130m agent cost plus €1.395m sell-on payment and €0.311m external solidarity cost
C_b	€0.054m	Estimated buyer-side agent cost
CF	1.000	No contractual discount, based on 1,047 remaining days

Variable	Value	Operational treatment
$CF \times V_s$	€7.000m	Contract-adjusted value relinquished

Table C2 - Input Table Perr Schuurs

8.4 Appendix D

Variable	Value	Operational treatment
P_{obs}	€18.000m	Reported €13m fixed fee plus €5m in bonuses
V_s	€14.000m	Market value at the transfer date
V_b	€45.000m	First relevant valuation after the first anniversary
W_s	€3.755m	Estimated gross fixed salary avoided by Juventus over the 356 remaining contract days
W_b	€2.820m	Estimated annual gross fixed salary paid by Fiorentina
C_s	€2.061m	€1.800m estimated agent cost plus €0.261m external solidarity cost
C_b	€0.085m	Estimated buyer-side agent cost
CF	0.706	Contract factor based on 356 remaining days
$CF \times V_s$	€9.884m	Contract-adjusted value relinquished

Table D1 - Input Table Moise Kean

Variable	Value	Operational treatment
P_{obs}	€23.770m	Reported £15m fixed fee plus £5m in bonuses, converted to euros
V_s	€8.000m	Market value at the transfer date
V_b	€40.000m	Most recent valuation available close to the first anniversary
W_s	€0.737m	Estimated annual gross fixed salary avoided by Manchester City
W_b	€1.236m	Estimated annual gross fixed salary paid by Ipswich Town
SO	€3.246m	Estimated value of Manchester City's 20% right over a future capital gain
C_s	€2.674m	€2.377m estimated agent cost plus €0.297m external solidarity cost
C_b	€0.037m	Estimated buyer-side agent cost
CF	0.991	Contract factor based on 717 remaining days
$CF \times V_s$	€7.928m	Contract-adjusted value relinquished

Table D2 – Input Table Liam Delap

8.5 Appendix E

Variable	Value	Operational treatment
P_{obs}	€18.200m	Reported €15.2m fixed fee plus €3m in bonuses
V_s	€10.000m	Market value at the transfer date
V_b	€70.000m	First valuation after the first anniversary
W_s	€0.740m	Estimated annual gross fixed salary avoided by Juventus
W_b	€1.852m	Estimated annual gross fixed salary paid by Bournemouth
SO	€5.180m	Estimated value of Juventus's 10% right over a future capital gain
C_s	€2.048m	€1.820m estimated agent cost plus €0.228m external solidarity cost

Variable	Value	Operational treatment
C_b	€0.056m	Estimated buyer-side agent cost
CF	1.000	No contractual discount, based on 1,065 remaining days
$CF \times V_s$	€10.000m	Contract-adjusted value relinquished

Table E1 – Input Table Dean Huijsen

Variable	Value	Operational treatment
P_{obs}	€21.050m	Reported €15.55m fixed fee plus €5.5m in bonuses
V_s	€18.000m	Market value at the transfer date
V_b	€30.000m	First valuation after the first anniversary
W_s	€0.059m	Estimated gross salary avoided over the remaining 361 contract days
W_b	€1.000m	Estimated annual gross fixed salary paid by Sporting CP
SO	€1.343m	Estimated value of Anderlecht's 15% right over a future capital gain
C_s	€2.105m	Estimated seller-side agent cost; no external solidarity cost
C_b	€0.775m	Reported buyer-side intermediation expenses
CF	0.711	Contract factor based on 361 remaining days
$CF \times V_s$	€12.798m	Contract-adjusted value relinquished

Table E2 – Input Table Zeno Debast

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