OLD HABITS ARE HARD TO CHANGE: EVIDENCE FROM ISRAELI REAL ESTATE CONTRACTS

Doron Teichman
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BY

DORON TEICHMAN*

I. INTRODUCTION

Imagine you live in Xavierland. Xavierland is a modern stable economy with low inflation and a liberal foreign currency market. Its local currency, the Xavier Dollar, tends to fluctuate according to different developments in Xavierland and abroad. Like other residents of Xavierland you earn a salary paid in Xavier Dollars. Now also imagine that you wish to rent an apartment to live in. After some calculations you’ve figured that you can spend one third of your salary on housing. In which currency would you want to specify the price of housing: American or Xavier Dollars? Now let’s switch sides. Imagine that the main asset you own is an apartment in Xavierland. You rent it out in order to finance your consumption that is mostly quoted in Xavier Dollars. In which currency would you want to rent your apartment: American or Xavier Dollars?

Israelis tend for the most part to set prices in real estate contracts in American Dollars (hereinafter: dollars). On its face this behavior is puzzling. Why would two parties living in Israel, who spend and earn Israeli Shekels (hereinafter: shekels), wish to index one of their most substantial financial obligations to a volatile index such as a foreign currency? Given this puzzling phenomenon, the Article has three main goals. First, it aims to describe the rise of dollar indexing in Israeli real estate contracts over time, and its persistent use in the face of changing economic circumstances. Second, it attempts to explain this behavior by drawing from different bodies of theoretical

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literature. Finally, it evaluates the normative implications of the current situation, and considers existing and proposed legislation in the area.

As noted, the analysis presented in the Article builds on several bodies of theoretical literature. It begins by turning to traditional economic work dealing with price adjustments and indexing in long term contracts.\(^1\) This literature has demonstrated the role of indexing in promoting efficient contracts by dealing with issues such as the attitudes of the contracting parties towards risk and their need to control opportunistic behavior over the duration of the contract. Nonetheless, as will become clear from the case study at hand, these theories do not present a full explanation for the behavior observed in the Israeli real estate market. Thus, I will turn to explore alternative theories of contract design, which focus on the role of social norms and conformity.\(^2\) These theories point out that contracting parties do not function in a vacuum, and that the choices made by other contracting parties might affect contract design. Finally, I will present studies from the area of cognitive psychology that may shed additional light on the behavior documented in this study.\(^3\) More specifically, these studies point out that an array of cognitive biases might affect contract negotiations in a way that impedes contracting out of socially accepted terms.

Methodologically the Article is part of the growing field of qualitative case studies of contracting. Building on the seminal work of Stewart Macaulay,\(^4\) many writing on contracts and commercial transactions from an economic perspective have recently turned their attention to qualitative work.\(^5\) These studies examined the behavior of

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4 Id.
contracting parties in light of existing theoretical predictions, and contributed tremendously to our understanding of issues such as reputational bonds, \(^6\) secured credit, \(^7\) hold up problems, \(^8\) default rules, \(^9\) contract formation, \(^10\) and the role of contract law in general. \(^11\) The unique setting of this study differs from existing case studies in several theoretical and practical regards. First, the study examines contracts used by the general public and not by a distinct contracting group, as is the case in much of the existing literature. \(^12\) Since social norms tend to emerge in closely knit communities, \(^13\) expanding the discussion to broader communities may offer new insights to the contracting norms literature. Second, the study focuses on a single provision, namely, the pricing provision. This provision is of unique importance since much of the economic analysis of contract law depends on the assumption that contracts include well functioning pricing mechanisms that reflect the allocation of risks. Finally, the study deals with a topic that is of concern for policymakers, and therefore offers concrete policy recommendations.

Aside from its legal aspects, the Article also relates to the vast economic literature on the role of dollarization in developing countries. This literature has presented stylized models of the phenomenon, \(^14\) and documented it empirically. \(^15\) Despite the growing

\(^6\) See, e.g., Bernstein, Diamond Industry, \(id\); Bernstein, Cotton Industry, \(id\).
\(^7\) See Mann, Secured Credit, \(supra\) note 5.
\(^8\) See, e.g., White & Ben-Shahar \(supra\) note 5.
\(^10\) See, e.g., Daniel Keating, \(Exploring the Battle of the Forms in Action, 98 MICH. L. REV. 2678\) (2000).
\(^12\) See, e.g., Bernstein, Diamond Industry, \(supra\) note 5 (focusing on contracting within the diamond industry); White & Ben-Shahar, \(supra\) note 5 (focusing on contracting within the auto industry).
interest among economists in dollarization, the economic literature on the topic lacks at several levels. First, economists have for the most part focused on macro level dollarization, and explored aggregate data on bank deposits and firm debt. This Article, in contrast, explores the micro level contracting decisions that individuals make. Second, economic models by their very nature explore narrow questions using simplifying assumptions. In this Article I try to present the rich body of theories that help reach a deeper (alas, less elegant) understanding of the behavior at hand. Finally, economists tend to ignore the role law plays in dealing with some of the problems associated with dollarization. This Article will deal with this question directly, and argue that law can help private parties improve contract design.

The case study presented in this Article deals with a very specific market, namely, the Israeli real estate market. Nonetheless, the Article presents several general insights that shed new light on array of theoretical questions. First, the Article brings to the forefront the phenomenon of social default terms, and presents how social norms can structure contracts not only within small discrete contracting communities, but among the general population as well. Second, the Article evaluates the difficulties contracting parties face in contracting around socially accepted contract terms. This evaluation will demonstrate that fully rational well informed parties might contract suboptimal contracts despite low transaction costs and extremely high stakes. Finally, the Article argues that contract law has a larger role than the traditional view presented by legal economists, and that legislative intervention with the freedom of contracting parties could help them cope with some of the problems created by inefficient contracting norms.

The Article is organized as follows: Part II will describe the use of indexing mechanisms in real estate contracts in Israel. It will present both the limited quantitative data available on the subject, and a rich body of qualitative information. Part III will turn to explain the behavior observed in the market, and suggest that the main explanation for the observed behavior lies beyond traditional economic theories that focus on the

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incentives of contracting parties to maximize the contractual surplus. Part IV will then turn to explore the normative implications of the study, and argue that there might be a role for legislative intervention in the market in order to assist parties to shift to an efficient equilibrium. Finally, Part V concludes.

II. DOLLAR INDEXING IN ISRAELI REAL ESTATE CONTRACTS

In this Part, I will describe the contracting behavior observed in the Israeli real estate market. The description will rely on three main sources: quantitative data collected by the Israeli Central Bureau of Statistics (ICBS), in depth interviews with an array of players in the market such as real estate brokers and managers of real estate companies, and a review of media stories covering major trends and events in the market.

There is limited quantitative data on the behavior of contracting parties because of the private nature of the activity and the difficulty to collect information. Nonetheless, in recent years the ICBS has assembled a data set of real estate leases as part of its calculation of the Consumer Price Index (CPI). While the data set covers very few years, and only includes information about the residential rental market, it does help draw a picture of current behavior in the market since the sample is constructed so that it will represent the national market, and includes several thousand contracts each year. In table 1 I present the data regarding the pricing mechanism employed in real-estate contracts in the years 2000-2006:

<table>
<thead>
<tr>
<th>Pricing</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dollar</td>
<td>97.66</td>
<td>97.61</td>
<td>96.37</td>
<td>93.79</td>
<td>91.28</td>
<td>88.19</td>
<td>86.74</td>
</tr>
<tr>
<td>Shekel</td>
<td>2.34</td>
<td>2.39</td>
<td>3.63</td>
<td>6.21</td>
<td>8.72</td>
<td>11.81</td>
<td>13.26</td>
</tr>
</tbody>
</table>

TABLE 1: PERCENTAGE OF DOLLAR AND SHEKEL PRICING IN ISRAELI REAL ESTATE CONTRACTS

The data demonstrates that the vast majority of contracts denominate the price in dollars. In addition, it is quite clear that in recent years there has been a decrease in the use of
dollars, and a move towards shekel pricing.¹⁶ Moving into the content of the contracts, and viewing the indexing mechanisms employed in them, adds to the complexity of the picture. As table 2 shows there are four different such mechanisms: dollar priced contracts are either indexed to the Representative Exchange Rate (RER) published by the Bank of Israel¹⁷ or set at a fixed rate; shekel priced contracts are either indexed to the CPI or include a fixed price provision. Note that the rather peculiar fixed dollar contracts are in effect fixed shekel contracts, since during the duration of the contract they have a single pre-fixed shekel price that is determined by the fixed exchange rate chosen by the parties at the time of contracting. Thus, one can see that the actual drop in the use of dollars has been slightly higher than table 1 reveals.

<table>
<thead>
<tr>
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<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>RER</td>
<td>97.21</td>
<td>97.37</td>
<td>95.53</td>
<td>92.72</td>
<td>89.92</td>
<td>86.05</td>
<td>84.29</td>
</tr>
<tr>
<td>Fixed Dollar</td>
<td>0.48</td>
<td>0.27</td>
<td>0.82</td>
<td>1.05</td>
<td>1.35</td>
<td>2.14</td>
<td>2.44</td>
</tr>
<tr>
<td>Fixed Shekel</td>
<td>1.33</td>
<td>1.55</td>
<td>2.59</td>
<td>4.84</td>
<td>7.57</td>
<td>10.65</td>
<td>12.45</td>
</tr>
<tr>
<td>CPI</td>
<td>0.98</td>
<td>0.81</td>
<td>1.06</td>
<td>1.39</td>
<td>1.16</td>
<td>1.16</td>
<td>0.82</td>
</tr>
</tbody>
</table>

**Table 2: Percentage of Indexing Methods in Israeli Real Estate Contracts**

The picture arising from the ICBS data is confirmed by other sources as well. According to several real estate brokers, most prices in the market are quoted in dollars, and an overwhelming majority of the contracts are then indexed to the dollar.¹⁸

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¹⁶ The table presents the latest official information from the ICBS. According to one report the downwards trend of dollarization has continued and at the end of 2007 68% of rental contracts are denominated in shekels. See The Bank of Israel, Public Report on the Monetary Discussion in the Bank of Israel Regarding the Interest Rate During December 2007. 6-7 (Dec., 2007) available at http://www.bankisrael.gov.il/deptdata/monetar/protocol/pro0712h.pdf.

¹⁷ On Mondays through Fridays the Israeli Central Bank publishes a representative exchange rate that reflects the average of the different transactions conducted in the market during the day. For general information on the representative exchange rate see http://www.bankisrael.gov.il/eng.shearim/appendix_eng.htm (last visited November 20th, 2007).

¹⁸ See interview broker #1 and interview broker #2.
Furthermore, a look at the major websites advertising real estate classifieds reveals a similar picture in the current real estate sales market. For instance, at the first search page of one of these sites on a random day one could find 17 ads advertising dollar prices and 4 ads advertising shekel prices (four additional ads did not specify a price). In other words, approximately 80% of the ads were in dollars. This figure demonstrates the large use of dollar pricing on one hand, and the downwards trend in previous years continuing into 2007.

There is no quantitative data that can pinpoint exactly when the use of dollars became a prevalent phenomenon in the Israeli real estate market. Yet there seems to be a consensus among all current market players that it emerged as a way to cope with the inflation of the 1970s and the hyperinflation that plagued the Israeli economy in the early 1980s. During the 1970s and 1980s the Israeli economy suffered from a growing rate of inflation that eventually peaked at over 450% in 1984-85. In such an economic setting, entering into long term contracts that must specify a price in monetary terms becomes a thorny task, as any price the parties might agree on soon has little economic meaning. Using a firm currency such as the dollar can help the parties structure their relationship and overcome this problem. With respect to pricing, if prices are not quoted in a firm currency they need to be constantly adjusted upward in order to reflect market prices. Thus, while one could theoretically quote real estate prices in shekels and adjust them to inflation, in a period in which as a regular matter the shekel price at the end of the week was significantly higher than the one at the beginning of the week, it is impractical to do so since real estate assets tend to be a while on the market. As for indexing to the dollar, this measure promised parties that the monetary sums specified in the contract will continue to have economic meaning over the duration of the contract, and will not be

19 See http://yad2.co.il (visited Nov. 25th, 2007) (on file with author).
20 One should note that the comparison made in the text is imprecise since it does not compare the sample of the ICBS with an equivalent current sample. The point is merely to illustrate general trends in the market.
21 See Interview Broker #3. See also Arik Mirovski, The Real-Estate Market is Attached to the Dollar, THE MARKER – REAL-ESTATE, Jan 13th, 2006 at 8 (suggesting that the phenomena started in the late 1970s).
eroded by inflation.\textsuperscript{23} Note that the parties could achieve this later goal by indexing the contract price to alternative indexes, notably, the CPI. It seems that the main reason this mechanism was not adopted was the relative convenience of indexing to the dollar. The existence of the RER makes indexing to the dollar extremely convenient, since it enables the parties to calculate the indexed contract price any day by simply multiplying the price by the RER.\textsuperscript{24} Indexing to the CPI, on the other hand, is more complicated since the index is published only once a month, 15 days after the end of the month. Thus, the parties might find it difficult (or even impossible) to calculate the contract price applicable on a specific day.

Yet changing economic circumstances have created problems in using dollars as a pricing device. In the 1980s, the Israeli foreign currency market was highly regulated and the economy was closed to the free flow of capital.\textsuperscript{25} This allowed the central bank to control the exchange rate, and calibrate it to local inflation.\textsuperscript{26} Thus, the dollar could serve as an easy to use proxy for general price changes in the market. During the 1990s this situation changed dramatically as the foreign currency market was deregulated, and restrictions on the moves of capital were removed.\textsuperscript{27} By May 1998 the market was almost completely unregulated, and as a result capital flows in and out of the country grew while the exchange rate volatility rose.\textsuperscript{28} In this new world the exchange rate of the shekel was suddenly influenced by variables such as global interest rates, the security and political stability in Israel, international trade, and the like. Hence, while in the age of controlled exchange rates contracting parties looked at the dollar as a steady index that moves upwards with inflation; in the era of an unregulated foreign currency market exchange

\begin{footnotes}
\item[23] I will analyze in greater detail the incentives of the parties to use an indexing measure below. See infra notes 43-55 and accompanying text.
\item[24] Since the RER is not published on Saturdays and Sundays contracts must include provisions that specify the method of calculation of payments due on those days.
\item[25] For a description of the Israeli foreign currency market in the relevant years see Avi Ben Basat, The Obstacle Course to a Market Economy in Israel, in THE ISRAELI ECONOMY, 1985-1998 1, 14-6 (Ben-Basat ed., 2002).
\item[26] Balfur Ozer, Lecture, The Influence of Capital Moves on the Variance of the Exchange Rate, 1 (Jan. 1\textsuperscript{st}, 2004) (presenting the strong connection between the exchange rate and inflation in Israel during the years 1987-1997).
\item[27] Daniel Gottlieb & Mario Blejer, Liberalization in the Capital Account of the Balance of Payments, in Ben Basat, id 243, 243-4.
\item[28] Id. at 244.
\end{footnotes}
rates suddenly began to fluctuate both upwards and downwards with no necessary connection to local inflation.  

The volatility of the exchange rate created a problem for contracting parties as it suddenly added to real estate contract a new risk regarding the size of the payments under the contract. In order to cope with this problem parties began to utilize a set of tools aimed at shielding the contract from exchange rate volatility. One of the basic ways to achieve this goal is by setting maximum and minimum dollar rates. In indexing provisions, this manifested itself in specified dollar ranges. For example, if the dollar is trading at 4.00 shekels at the time of signing, the contract might specify that future payments will be limited between the range of 3.90 and 4.10. Similarly, with respect to pricing, parties often advertise prices in dollars, while stating a minimum exchange rate for price calculations. For instance, in November 2007 when the dollar dropped below the 4 shekel mark, sellers of real estate continued to advertise prices in dollars but stated that the exchange rate for the calculation of the actual payments will be 4.2 shekels. Volatility risks also affect the design of the schedule of payments. In times of sharp changes in exchange rates, parties might behave in an opportunistic manner and try to manipulate the timing of the payment in order to gain more profits. In order to cope with this type of behavior, parties construct specific provisions that determine the exchange rate for late payments. Finally, contracting parties engage in an array of unilateral hedging activities in order to limit their risks. Such activities may include purchasing call options, entering into forward transactions and buying other dollar-oriented financial tools. Undoubtedly these tools can reduce (or even eliminate) the risks associated with shifts in exchange rates. Yet using them comes at significant cost (up to 1.2% of the transaction) that the parties must bear.

29 Ozer, supra note 26 at 1-4.
30 See Interview Broker #3. See also Shai Amit, Guarding the Money, THE MARKER – REAL-ESTATE, May. 18th, 2007 at 8.
34 Id.
An additional method to deal with problems arising from contract design is by trying to resolve them when the risk actually materializes, through ex post renegotiation of the contract. For instance, during periods of sharp devaluations of the shekel, parties faced a price that was much higher than they expected ex ante. This gap brought the parties in some instances to renegotiate the contract, and reduce the actual shekel price by either setting a cap on the exchange rate or lowering the dollar price.\(^{35}\) As can be expected, the prospect of renegotiations depends to a large degree on the question whether the transaction is a one shot event, or whether the parties intend to continue dealing with each other. Contracts for the transfer of ownership are mostly one shot, high stakes contracts, and the party gaining from the change in currency rates has little motivation to make any concessions regarding the price. As one broker put it “people have rights, a contract is a contract. If a buyer asks to change the price when the dollar changes, the seller’s lawyer will tell the seller that he’s an idiot if he agrees to adjust the price.”\(^{36}\) Rental agreements, on the other hand, reflect a long term relationship that both parties might want to sustain. Thus, interviewees pointed out that in such contracts renegotiations were common in time of extreme fluctuations.\(^{37}\)

An interesting aspect of rental renegotiations is the *reason* for them. Rational choice models predict that parties will engage in renegotiations when this move serves both their interests.\(^{38}\) For example, if the tenant has a credible threat to breach (say because the higher price will put her in bankruptcy) it might be in the best interest of both parties to agree on a lower price that the tenant can afford to pay. Yet while some reports indicate that such credible threats play a role in rent renegotiations,\(^{39}\) the main reason stated for renegotiation by market players in this study was not necessarily the credibility of the threat, but rather the parties’ perception of fairness, which required the landlord to forgo the unexpected windfall caused by the new exchange rate. As an agent put it “In

\(^{35}\) *See* Interview Broker #1.

\(^{36}\) *Id*.

\(^{37}\) *Id*.


rental contracts parties do renegotiate if there is a large change. I always tell landlords that they should be fair with their tenants so that they stay. It’s important to be fair.”

Before concluding the descriptive part of this Article I would like to emphasize that the picture presented thus far was of the private residential market alone. As it turns out, the commercial market (i.e. leases in office buildings, shopping malls, etc.) functions quite differently. While the pricing in the commercial market follows the footsteps of the private market, and generally prices are denominated in dollars per square meter, the indexing is different. As several interviewees pointed out, in commercial real estate contracts the dollar price is converted into a shekel price at the day of signing, and from that point the price is indexed to the CPI. One commercial realtor alluded to this difference and noted “in the commercial market people are more sophisticated. They understand the risks associated with dollar indexing.” As we shall see below, this stark difference between the two markets might be relevant to the evaluation of the efficiency of the contracts in the private market.

In sum, in this Section I reviewed the dollarization of the Israeli real estate market. The review demonstrated how dollarization became widespread during the days of hyperinflation, and how it remained prevalent despite the fact that the underlying economic circumstances changed tremendously. With this background in hand, I now turn to discuss in more detail the theoretical explanations for the observed behavior.

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40 Id. To be sure, renegotiation in this context can be interpreted as a rational step on behalf of landlords if they expect tenants to behave irrationally and breach the contract out of spite despite the fact that such a move is not in their best interest. Such behavior has been documented in ultimatum games in which the willingness of parties to irrationally reject offers they perceive as unfair causes the opposing party to choose to adopt a fair division. The first experiments evaluating behavior in ultimatum games were reported in Werner Guth, Rolf Schmittbeger & Bernd Schwarz, An Experimental Analysis of Ultimatum Bargaining, 3 J. ECON. BEHAV. & ORG. 367 (1982). For a review of ultimatum game studies see Werner Guth, On Ultimatum Bargaining Experiments - A Personal Review, 27 J. ECON. BEHAV. & ORG. 329 (1995).

41 See Commercial Interview #1 and Commercial Interview #2. See also, Aric Mirovski, Commercial Real-Estate: Talk in Dollars, Sign in Shekels, THE MARKER, April 25th, 2007 at 10. Similarly, contracts for the sale of new housing from construction companies are mostly indexed to an index measuring the cost of inputs in residential construction that is published monthly by the ICBS. See Interview Constructor #1. For information on this index see http://www1.cbs.gov.il/reader/?MVal=ew_usr_view_SHTML&ID=491 (last visited Dec. 3rd, 2007).

42 See Commercial Interview #1.
III. UNDERSTANDING DOLLARIZATION

In this Section I will review the different theoretical explanations for the dollarization of the Israeli real estate market. I will begin by reviewing the traditional economic theories of indexing, and argue that these theories do not explain the persistent dollarization of the market. I will then turn to explore theories of contracting norms, and argue that they offer a more convincing explanation for the observed behavior. Finally, I will review several behavioral biases that might help stabilize contracting social norms.

1. Traditional Theories of Indexing

The initial question that ought to be posed is why contracting parties choose to index the price in a contract. Presumably perfectly informed rational parties have no need to index the contract price since they can always estimate ex ante the probability of different contingencies that will affect the value of the contract, and price them appropriately with a fixed price contract. Despite this initial analysis, economists have offered several explanations for the widespread phenomenon of indexing. A first economic explanation is the need to allocate risks between the parties efficiently. Generally, the efficient bearer of a contractual risk is the party that is better situated to minimize the expected costs of the risk or that can better hedge against it. Indexing the price allows the parties to allocate risks associated with price shifts to the party that can better deal with them. For example, according to Posner and Rosenfield a price provision in a long term contract for the supply of coal that is indexed to an external measure is aimed to allocate the risks associated with that measure. Thus, if market conditions change dramatically (say, the price of coal quadruples) then the interpretation of the contract should stem from the question of efficient risk allocation.

44 Posner & Rosenfield, Id. at 90-1.
45 Id. at 94-5.
46 Id.
Later economic theories have argued that risk aversion alone cannot explain the different arrays of pricing schemes one observes (or fails to observe) in the market.\textsuperscript{47} Thus, these scholars turned to point out the role of indexing in fostering efficient cooperation between the parties.\textsuperscript{48} Without indexing contracting parties will not face correct price signals, which can create inefficient behavior that will decrease the value of the contract. If, for instance, the contract price drops below the market price the buyer will have an incentive to overuse the product.\textsuperscript{49} In addition, a gap between the contract price and the market price might cause contracting parties to behave in a non-cooperative fashion in an attempt to evade performance and renegotiate the contract.\textsuperscript{50} In essence, a gap between the contract price and the market price could create a moral hazard problem in which the party who gains ex post from the gap behaves in a way that the parties would not have wanted ex ante.

Another traditional economic explanation for price adjustments is tied to the effect of the contract price on ex ante expenditures of contracting parties on collecting information regarding future contingencies.\textsuperscript{51} The contract price establishes the division of the gains of trade between the parties. A party that has more information about future contingencies can manipulate the price mechanism in order to increase its relative share of the surplus. That given, both parties have an incentive to expend resources in order to acquire such information. Price adjustment mechanisms remove some of the private benefits a contracting party can gain from acquiring information that will affect future prices. Removing this incentive is beneficial for both parties as it prevents wasteful mutual search costs.

Viewing the body of economic theories on the matter suggests that they offer a convincing explanation for the adoption of dollarization since it helped parties deal in an efficient way with three main problems of contracting in an environment of hyperinflation (or even regular inflation). First, real estate contracts reflect large financial

\textsuperscript{47} Goldberg \textit{supra} note 1 at 529-31.
\textsuperscript{48} \textit{Id.} at 531.
\textsuperscript{49} \textit{Id.}
\textsuperscript{50} \textit{Id} at 532-3.
\textsuperscript{51} \textit{Id.} at 532.
obligations for the parties that routinely tie a large part of their income and wealth. Indexing allows risk averse parties to limit the possibility that the value the surplus they expected to gain from the contract will change dramatically. Given the strong correlation between inflation and exchange rates in Israel in the past, dollarization offered parties a simple way to deal with the risks of such changes caused by inflation. Second, real estate contracts might create many chances for opportunistic behavior that can arise if the contract price diverges from the market price. For instance, a landlord may limit efficient maintenance that the parties would both agree on ex ante in order to encourage tenants paying below market rent to leave. Thus, ex ante parties would like to design the contract in a way that will assure the landlord does not have incentives to try to drive the tenant to leave. Finally, estimating the risks associated with inflation in order to set an appropriate fixed price for the contract seems like a costly act that both parties could gain by avoiding. Indexing allows both parties to avoid the need to speculate about future inflation rates.

Yet once the value of the exchange rate as a proxy for inflation has diminished significantly, it is difficult to see how dollar indexing promotes the interests of the contracting parties. To the contrary, dollarization raises the volatility of the contract price with no apparent economic justification. For example, a family that signed a contract to sell their apartment for $300,000 on August 1st 2007, and agreed to receive half of that sum with the transfer of possession four months later, discovered that the shekel price they received was about $15,000 less than what they anticipated. Similarly, a family that signed a contract to buy an apartment for $300,000 on December 15th 2001, and agreed to pay half of that sum with the transfer of possession four months later, found itself facing an additional obligation equivalent to almost $20,000. By any account, these are significant sums for the average Israeli household. Furthermore, at times dollarization brings about outcomes that are in reverse to the trends in the real estate

52 The unexpected inflation in Israel in the 1970s and 1980s created a tremendous amount of litigation, as parties attempted to excuse themselves from performing contracts with prices that were not indexed. For a review of the case law see, e.g., Shirly Renner, An Assessment of Recent Trends in Israeli Contract Law, 21 MISHPATIM 33, 48-56 (1991).
53 The RER on August 1st 2007 was 4.337 while the RER on December 1st was 3.83. Historic RARs are available at http://www.bankisrael.gov.il/eng.shearim/index.php.
54 The RER on December 15th 2001 was 4.237 while the RER on April 15th 2002 was 4.793.
market. Take for example a security crisis in Israel (e.g., the terror attacks of 2001-2). Such an event may cause a slow down in the economy and lower prices of real estate, while it could cause foreign investors to withdraw their investments, bringing about a drop in the value of the shekel. In other words, declining market prices will be coupled by an increase in dollar-indexed contract prices. From all perspectives discussed above dollar indexing turns out to be a liability and not an asset for the parties. It inserts into the contract new risks associated with global currency markets that have little to do with the surplus the parties expect to gain from the contract. In addition, it raises the probability that the contract price will diverge from the market price. And finally, it requires both parties to estimate ex ante the potential volatility in exchange rates so that they can calibrate the contract price accordingly.

The evidence presented in Section II seems to support the inefficiency hypothesis as well. First, the quantitative data documented a clear decline in dollarization in recent years. While this decline might reflect growing heterogeneity, and that dollarization no longer fits some groups of society, its more likely interpretation is that people in general are learning of the problems of dollarization and shifting away from it. Second, parties often adopted contractual mechanisms aimed at circumventing dollarization such as maximum and minimum exchange rates. These “solutions” seem to indicate that dollarization itself has become a “problem.” Finally, profit maximizing commercial players no longer index their contracts to the dollar. Since such players are disciplined by market forces, it is reasonable to assume that they tend to shift quickly (or at least faster than individuals who are not disciplined by the market) from an inefficient contract design to an efficient one. Thus, one can learn from their observed behavior what the optimal contract design is.

To be sure, one should not overstate the inefficiency associated with dollarization. While at the time dollarization emerged contracting without it (or an alternative similar mechanism) was simply not an option for the parties, currently, it represents a tolerable

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55 Similarly, an immigration wave from a wealthy nation could both raise the prices of real estate and strengthen the local currency creating a large gap between the contract price and opportunity costs.
nuisance. During most of the time the dollar-shekel exchange rate fluctuates in a way that adds to the volatility of contract payments for no apparent reason, but does not threat to undermine the parties’ intentions in a significant way. It is only once every several years that something dramatic occurs in the foreign currency market, which causes a large change in the value of the dollar, and a transformation of contract prices. In other words, there was an asymmetry between the inefficiency associated with not adopting dollarization in the past and the inefficiency associated with its continued use in the present.

2. Dollarization and the Default Rules Literature

Given apparent inefficiency associated with current dollarization, I now turn to explore explanations for the persistent dollarization of the market. A good place to begin this endeavor is the literature dealing with legal default rules. In essence, dollarization is a form of default rule that is created by a social norm rather than by the law. Thus, if there are impediments to contracting around a legal default rule, they might also block contracting out of dollarization. One such impediment, which can be rejected at the outset, is the transaction costs associated with contracting around the default term. Generally, if the costs of contracting around an inefficient default term are greater than the inefficiencies generated by it, rational parties will not waste resources contracting around it. There are two reasons to assume that this is not the case with respect to dollarization. On the one hand, the costs of contracting around dollarization are minimal. Interviewees reported that contracting parties routinely negotiate the price itself, and the terms under which it will be paid. Since the parties are negotiating the price provision anyway, doing some basic math and shifting from dollars to shekels should not be a complicated task. This is particularly true with regard to large scale transactions such as land transactions, where lawyers are often involved in drafting the contract. On the other hand, the stakes in question are extremely high. In most cases, real estate contracts represent one of the largest financial obligations a private household makes. Thus, the

56 See supra notes 53-54 and accompanying text for examples.
58 See Interview Broker #3.
potential benefit of optimizing the pricing mechanism of the contract seems to be rather large.

A second impediment to contracting out of a given default rule is the information that might be revealed in the negotiation process. A party suggesting to contract around a default term could signal by that act information about her nature. This, in turn, could cause the other party to demand a higher price or perhaps even forgo the entire relationship. For instance, Bernstein has suggested that in relational contracts a proposal to contract out of an accepted default term might be seen as signal that the proposing party is litigious and tends to rely on legal rights. Ben-Shahar and Pottow took this claim a step further, and argued that any deviation from the accepted contract term could be interpreted by the opposing party as a suspicious act, and could therefore act against the proposing party. In other words, even if the deviation aims to serve the mutual interests of the contracting parties, the party proposing it will be charged a premium for deviating from the contracting norm and suggesting an unknown term. In the context of this study, a suggestion to contract out of dollarization certainly runs against a contracting norm, and in that sense might be construed as a suspicious attempt by the proposing party to redivide the contractual surplus. Furthermore, such a suggestion might be perceived as an indication of uncooperativeness of the proposing party. As we have seen, in the event of large devaluations of the Shekel parties tend to renegotiate the contract price ex post in order to sustain their relationship. Insisting on a legal remedy for this issue could be seen as a signal that the proposing party will behave in a non-cooperative fashion in general in the event of unforeseen contingences that will require renegotiations.

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60 See Lisa Bernstein, Comment, Social Norms and Default Rules Analysis, 3 S. CAL. INTERDISC. L.J. 59, 70-71 (1993). See also Zamir, supra note 57 at 1757 (noting that “the mere suggestion by one party to contract around the ordinary rules may raise suspicion that she is contemplating a legal conflict”).


62 See supra notes 35-40 and accompanying text.
3. Dollarization and Contracting Norms

Another body of literature that could shed additional light on dollarization is the contracting norms literature. This literature has demonstrated that reputational concerns and customs explain much of the way contracts are designed ex ante and preformed ex post.63 Macaulay in his seminal study of contractual relations between manufactures in Wisconsin reported on the marginal role of law in structuring these relations and the central role of business norms.64 Following Macaulay’s footsteps, in a series of insightful papers Bernstein reported on the unique business norms governing contractual relations in different contracting communities.65 While Macaulay and Bernstein demonstrate the significant role of social norms and nonlegal sanctions in the contractual setting, their studies do not explore the role of these forces on the design of what might be the most important contract provision – the price. Recently, Young and Bruke presented a case study of pricing of agricultural land leases in Illinois.66 Pricing in such leases is usually based on a division of the crops between the farmer and the land owner. Traditional economic theory would predict that in such a situation the percentage received by each party would diverge between contracts depending on the expected productivity of the land. Yet Young and Bruke report tremendous uniformity in pricing, and point out that over 90% of the contracts adopted a ½: ½ or $\frac{2}{3}$:$\frac{1}{3}$ division.67 As they point out, contract terms may emerge around focal points, and once a single focal point becomes prevalent conformity will cause people to continue using it.68

Conformity seems to be one of the forces playing in the Israeli real estate market as well. Some interviewees describe a rather simple picture involving an existing norm that does not change over time. As one broker explained “it’s just convenient to work with dollars – that’s the habit.”69 Yet this answer begs the obvious question: why do

63 To be sure, my claim is not that parties design and perform contracts for reasons other than maximizing their individual welfare. Rather, the claim is that individual welfare is a complex term involving more than the monetary benefits that can be derived from the contract.
64 Macaulay, _supra_ note 2.
65 Bernstein, Diamond Industry, _supra_ note 5; Bernstein, Cotton Industry, _supra_ note 5.
67 _Id._ at 560-1.
68 _Id._ at 561-2.
69 See Interview Broker #2.
people conform, especially if they are leaving money on the table while doing so? In order to answer this question I must turn to additional economic and psychological theories. As will be evident from the analysis, conformity in contracts is a complex phenomenon that is driven by two forces. The first is external – people choose to contract the way other people contract in similar situations. The second is internal – people prefer to continue contracting the way they did in the past.

An external explanation for conformity can be found in theories dealing with network externalities in contracting. A network externality exists when people incur a benefit by adopting the same choices that others did. For instance, I might choose to use a computer that operates with Windows even if I find this operating system to be inferior, simply because I want to use the operating system that most of my colleagues use.

Several studies have evaluated the effects of network externalities and path dependency in the legal setting in general, and in the area of contractual relations specifically. These studies demonstrate that once certain contract provisions are adopted subsequent contracts will tend to duplicate them because of the advantages associated with using existing provisions, and not necessarily because their efficiency. For example, if a certain contract provision is already familiar to the courts, that alone might cause rational parties to continue using it and not adopt a new provision that they cannot be certain how the courts will interpret.

The area of pricing provisions offers an additional example of network externalities. Price systems are a type of network since they allow people to compare products on a scale prior to making their choices in the market. Once a market has converged on a certain pricing mechanism it might be difficult to shift to an alternative mechanism since consumers will find it complicated to compare the price of a product using the alternative mechanism with the prices of the rest of the products in the market.

72 See, e.g., Marcel Kahan & Michael Klausner, Standardization and Innovation in Corporate Contracting (or “The Economics of Boilerplate”), 83 VA L. REV. 713 (1997); Jody S. Kraus, Legal Design and the Evolution of Commercial Norms, 26 J. LEGAL STUD. 377 (1997); Lemley & McGowan, supra note 70.
73 Kahan & Klausner, id. at 718.
In the context at hand, individuals might find it difficult to compare the price of a shekel contract and a dollar contract since a complete comparison between the two contracts will have to take into account the uncertainty associated with exchange rates. If, for example, someone rents an apartment for 1,000$ she can know for certain that this apartment is cheaper than an apartment that is offered for 1,100$. Yet how does she treat an apartment that is priced at 4,000 shekels (assuming a 4.0 exchange rate)? True, the prices at the time of contracting are identical. But the overall difference between the two over the duration of the contract is unclear. This intuition can be seen in the remarks of one interviewee “If all the time you’re use to seeing prices in dollars you’re not going to ask me how much is it in Shekels. Your head is set on dollars. When suddenly there is one apartment that has a Shekel price people don’t understand and it makes things more complicated.”

A related aspect of the network effect of pricing can be found with respect to the platforms used to advertise real estate. Much of the real estate market is conducted in several websites in which the owners of property advertise. In order to ease the search for the appropriate asset these websites allow users to search the advertisements along dimensions such as size, location, type of asset, etc. Obviously, since price is an important search criteria, the websites also allow users to narrow their search according to maximal and minimal prices. Yet in order to facilitate a search prices must be aligned on one scale, and currently all major websites only facilitate dollar based searches. Thus, while owners of real estate are free to advertise their assets in whatever currency they want, if owners want their assets to come up as a search result they are required de-facto to quote their price in dollars.

Finally, the risks caused by volatile exchange rates might create an additional network effect in the real estate market. Residential real estate sales transactions are in many cases back-to-back transactions. In other words, the buyers in one transaction are the sellers in another. In this regard, the network of contracts offers parties cover from changes in currency rates since at the same time they create a dollar obligation and a

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74 See Interview Broker #3.
75 See http://www.homeless.co.il; http://www.yad2.co.il.
dollar entitlement. Yet one should note, that again the efficiency of such a mechanism depends on the fact that a network of dollar contracts is functioning. If one would design the network anew, she might well find it beneficial to design it as a shekel network.

In general, the network of dollar contracts can be analyzed through the lens of coordination games. Coordination games describe situations in which participating parties wish to choose a strategy that will compliment the choice of other players in order to achieve a mutually beneficial outcome. In such games the critical point is the relation between choices, and not necessarily the choices themselves. For example, a player might be indifferent between driving on the right hand side or the left hand side of the road, yet the player would want to make sure that he is driving on the same side as everyone else is. The payoffs of a coordination game can be described by the following matrix:

<table>
<thead>
<tr>
<th></th>
<th>Right (B)</th>
<th>Left (B)</th>
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<tbody>
<tr>
<td>Right</td>
<td>(10, 10)</td>
<td>(0, 0)</td>
</tr>
<tr>
<td>Left</td>
<td>(0, 0)</td>
<td>(10, 10)</td>
</tr>
</tbody>
</table>

Note that both players in the game are indifferent between their potential strategies. If player A signals that he intends to play right, player B will choose right as well; similarly, if he signals that he intends to play left, player B will choose left as well. Thus, both right-right and left-left could function as an equilibrium. Nonetheless, once the parties converge on a certain strategy in the game (a likely event in the case of repeated play), then they are both expected to choose to continue using this strategy.

One of the characteristics of coordination games is that they might generate a stable inefficient equilibrium if the payoff of the game changes over time. Take for example the decision British drivers made regarding which side of the road to drive on. The initial game might have been similar to the one described above. That is to say,

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77 It is customary to represent payoffs in games in a matrix like the one in the text. Each side of the matrix represents the two strategies facing each player in the game. The cells of the matrix represent the payoffs of any combination of choices of the players, where the left number represents the payoff of player A and the right number represents the payoff of player B.
drivers were indifferent between driving on the right and driving on the left, as long as they all drove on the same side. So British drivers flipped a coin and chose left. Yet as time passed the cost structure of the game changed since driving on the left side of the road caused costs such as limiting the ability to import cars from other countries and difficulties to British drivers abroad and to foreign drivers in Britain. Thus, the current game can be described by the following matrix:

\[
\begin{array}{cc}
5, & 5 \\
0, & 0 \\
0, & 0 \\
10, & 10
\end{array}
\]

Viewing the payoffs it is clear that the payoffs of the players are maximized when they all choose to play right. Yet notice that if a player knows that all other players will choose to play left, his best reply will be to choose left as well. While this situation is not likely if the players are facing the first round of play, it is quite likely if the group started at some point in the past to choose collectively to play right. Thus, the group might find itself stuck in an inefficient equilibrium that all members of the group would like to move out of.\(^\text{78}\)

4. Behavioral Explanations for Dollarization

Thus far I have focused on the external forces driving towards conformity. I now turn to explore how elements of the decision making process of individuals can cause them to stick with old contracting habits. Cognitive psychology has documented an array of biases that cause people to systematically reach decisions that violate the predictions of rational choice theory.\(^\text{79}\) Following this literature legal scholars have explored the implications of these phenomena on an array of legal questions such as the optimal size of tort damages, the design of crime control systems, and more.\(^\text{80}\) These studies

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\(^{78}\) See Eric Posner, *Law, Economics, and Inefficient Norms*, 144 PA. L. REV. 1697, 1711-1713 (1996) (analyzing inefficient temporal lags with respect to social norms); Lemley & McGowan, *supra* note 72 at 497 (pointing out that once a standard is established it will be difficult to change even if it becomes inefficient over time).

\(^{79}\) For an early contribution see Kahneman & Tversky *supra* note 3.

demonstrated that the rational choice model, may, at times, lead to inaccurate predictions regarding the way parties are expected to react to legal rules.

A first aspect of decision making that might hamper shifting out of dollarization is the status quo bias. Psychologists have documented that individuals tend to prefer sticking with the status quo, and avoid decisions changing it. This tendency is related to the “endowment effect,” which causes people to demand a higher price in order to part from an entitlement compared to the price they are willing to pay in order to buy it. In one of the famous studies documenting this phenomenon Daniel Kahneman, Jack Knetsch, and Richard Thaler randomly endowed participants with a coffee mugs, and then created a “mug market” in which mugs could be transferred to participants who value them the most. Since initial entitlements were assigned randomly, one would expect that approximately half of the mugs would switch hands. Nonetheless, the results were that mug holders valued them more than twice as high as mug buyers, and very few transactions took place in the market. Additional studies documented this bias in areas such as investments, job selection, attitudes towards risk, consumer goods, and more.

In the context of contract design parties might view existing accepted contract terms as a type of entitlement, and therefore demand a high premium in order to forgo a default term that they perceive to be beneficial for them. This high evaluation could

82 Id. at 1332.
84 See Zamir, supra note 57 at 1760-62. As noted by Zamir, the application of the status quo bias to default rules is not straightforward, since in the case of default rules parties do not have any rights against each other prior to entering the contractual relationship. Id. Nonetheless, as Zamir points out the parties might still perceive the rights created by default terms as such that create an entitlement.
stand in the way of negotiating around the term since, much like in the case of coffee mugs, it will bring about a gap between the minimum price asked to forgo the term and the maximum price the opposing party is willing to pay. This theoretical conjecture has been documented in several empirical studies. Korobkin tested it in a series of neatly designed experiments in which he divided participants into groups and manipulated the default rule governing questions such as contract damages. The clear results were that despite identical payoff structures the groups preferred sticking with the default rule that was assigned to them. Similarly, Sunstein explored the willingness of law students to buy or sell two weeks of vacation time as part of their negotiations for an employment contract with a law firm. As it turns out, students “endowed” with two additional weeks of vacation by the default rule demanded a significantly higher sum of money to forgo this right, than the sum the students who were not endowed were willing to pay in order to gain it.

A related aspect of decision making that might render the status quo sticky is regret theory. The basic insight of regret theory is that undesirable outcomes that are caused by inaction bring about less regret ex post than undesirable outcomes that were caused by an active decision. The role of regret in decision making has been documented in different settings utilizing an array of methodologies. For instance, using questionnaires Samuelson and Zeckhauser explored the effect of regret on investment choices between high risk stocks, moderate risk stocks, treasury bonds and municipal bonds. In their study, participants were randomly divided into groups. One group was informed that it recently inherited cash that it now needed to invest in one of the four investment options. The other group, on the other hand, was informed that the inheritance already came in the form of one of the investment options. Participants were then required to decide how to invest the inheritance in the future. Despite the fact that there were no transaction costs associated with switching investments, participants in the

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86 Id.
88 Id.
second group demonstrated a strong tendency to stay with the status quo. Using a different methodology Bar Hillel and Neter explored the willingness of participants to switch lottery tickets when offered an array of incentives to do so. As they point out, a large portion of participants refused to trade tickets, and preferred sticking with the ticket that was randomly assigned to them, despite the fact that both tickets reflected equal probabilities to win the lottery. According to Bar Hillel and Neter a world in which the original ticket wins after being traded represents a loss, while a world in which the original ticket does not win after not being traded, represents a forgone gain. Since people tend to be averse towards losses, the identical tickets are not perceived as such, and the value of the original ticket is seen as higher.

In the context of dollarization, one can view dollar indexing as a social norm that people view as the given state of the world associated with inaction. Hence, when individuals need to decide whether to contract around it, they might perceive their wealth under it as a kind of benchmark against which they evaluate their wealth ex post. Both differences in evaluations of the value of dollarization resulting from the endowment effect, and fear of regret that opting out of dollarization will turn to be a wrong choice, can therefore cause parties to view dollarization as a desirable status quo. As one real estate lawyer put it “[a] seller that sold his property when the dollar was 4.2 and then the dollar rose to 4.5 feels like an idiot.” In this regard, note that in the unique area of pricing provisions, it is not a mere possibility that switching the default term will cause a loss to one of the parties. Rather, since the pricing provision divides the contractual pie, it

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90 Id.
91 Id. at 25.
92 Id. To be sure, despite the prominence of Bar Hillel and Neter in the literature dealing with the stickiness of default rules, the application of their study to the area is not straightforward. In all of the experiments Bar Hillel and Neter report on subjects held a lottery ticket, and were offered to switch to an unknown ticket. Thus, sticking with the existing ticket was easier from a regret perspective, since participants could not find out ex post whether the ticket they would have switched to was a winning ticket. In the context of default rules, on the other hand, people making a decision whether to switch bets are familiar with both options, and therefore know that ex post they will be able to evaluate their wealth under both conditions. Thus, the more precise experiment relevant to the questions at hand would examine whether the reluctance to switch ticket was sustained in setting in which participants are familiar with both lottery tickets. Regretfully, such experiments have yet to do be conducted.
93 See Interview Lawyer #1.
is certain that from a monetary perspective ex post one of the parties will gain and the other will lose from any switch. Thus, if the inefficiency associated with dollarization is not sufficiently high, the parties might not be able to agree to contract around it.

Another characteristic of decision making under uncertainty that may affect the ability of parties to contract out of dollarization is the concept of “comparative ignorance.”94 According to this theory, people are anxious that their adversaries have some kind of advantage (e.g. information, skill, etc.) and therefore sticking to a known strategy that they are familiar with might serve their interest better. One study by Fox and Weber dealing with questions closely related to the topic of this article explored the willingness of players to bet on their knowledge of inflation rates.95 Interestingly, players (who were not trained as economists) were less willing to bet on inflation rates when they were provided with additional economic data that could help them reach an educated prediction.96 Fox and Weber speculate that the additional professional information triggered a perception of relative incompetence, which caused players to avoid the bet.97

Turning back to dollarization, indexing contracts to the dollar is a familiar practice for most Israelis. A suggestion to contract out of it might be seen as a sign that the suggesting party holds superior information on future exchange rates, and is attempting to get a larger part of the contractual surplus, rather than as a party that is trying to increase the surplus. Thus, the opposing party might prefer to stick with the familiar contracting behavior and not opt for change. Indications to this line of thought can be found in some of the comments made by interviewees. As one of them put it “I don’t know, it just seems really weird when someone asks to do it in Shekels. Like, does he know something that I don’t?”98 To be sure, I am not suggesting that parties actually hold private information as to the expected trends in the foreign currency market. All that I claim is that parties perceive other parties to hold superior information regarding

95 Fox & Weber, id. at 487-8.
96 Id.
97 Id.
98 See Interview Landlord #1.
expected currency rates. Furthermore, if the suggesting party tries to rationalize her proposal by explaining to the opposing party different aspects of exchange rates and risk and that she holds no knowledge of future rates, this might add to the feeling of comparative ignorance and could actually exacerbate the bias making agreement even more difficult.

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In conclusion, in this Section I reviewed an array of explanations, both from the perspective of rational choice theory and competing theories, for the persistent use of dollars in Israeli real estate contracts. The analysis demonstrated that while there were good reasons for this contract design in the past, currently it might not serve the best interest of players in the real estate market. With this insight in hand, I now turn to explore the policy implications of my analysis.

IV. **Policy Implications**

There are different ways in which a policymaker can deal with a persistent inefficient contracting norm. The first, and perhaps in most cases best option, is to do nothing.\(^{99}\) While it is true that parties might not always design optimal contracts, one should remember that contracting parties have a large incentive to overcome cognitive biases and collective action problems if doing so will enhance their personal wealth. On the other hand, external intervention by courts and legislatures could bring about adverse results ranging from raising transaction costs by forcing the parties to contract around it to causing the parties to forgo the contractual relation altogether. Such unneeded regulation of contracts is quite likely given the limited information regulators hold regarding the distinctive aspects of the contractual relationship. Furthermore, the data presented above documented a clear voluntary decline in dollarization in the last few years.\(^{100}\) Thus, there might be no real need for external intervention. Nonetheless, given

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\(^{99}\) For a cautious view regarding legal intervention with network externalities in the contractual setting see Lemley & McGowan, *supra* note 72 at 593.

\(^{100}\) *See supra* Tables 1 and 2 and accompanying text.
the detailed analysis of the real estate market presented in the previous parts of this paper, I wish to describe and analyze different ways in which regulators might choose to intervene in this market. I begin by analyzing moderate interventions that aim to assist the parties to deal ex post with the problems created by dollarization. I then turn to policies that aim to cause the parties to opt out of dollarization ex ante.

1. Ex-Post Policies

The need to deal with unforeseen contingencies does not necessarily imply a need to index the price. Indexing provisions are an example of a redetermination provision that by pre-agreed formula adjusts the price. The parties can also use renegotiation provisions that will bring about a newly agreed price that will reflect the change in circumstance.\(^{101}\) Renegotiation provisions can have limited specifications and rely on the implied duty of good faith.\(^{102}\) The problem with such provisions is that ex post the consent of both parties is needed in order to adjust the price. Yet given the fact that such an adjustment will normally run against the interests of one of the parties, the bilateral monopoly is likely to lead negotiations to a deadlock. In order to overcome this problem the contract can stipulate that if market conditions bring about a situation in which the contract price is not adequate, it will be renegotiated, and allow a third party to intervene in case the negotiation over the adjustment breaks down. For example, some long term contracts include “gross inequity” clauses that allow courts to adjust the contract price in some situations.\(^{103}\) Following this line of thought some commentators have suggested that the courts impose a legal duty to renegotiate the price in good faith.\(^{104}\)

Another way courts could intervene is by redesigning the parties’ rights under the contract. Courts in Israel, the United States and other countries have dealt with an array of problems associated with the pricing of long term contracts. For the most part, these contract disputes reach the courts when something goes extraordinarily wrong with the


\(^{102}\) Id.

\(^{103}\) Goldberg, *supra* note 1, at 528-9.

pricing mechanism of the contract, and the design adopted by the parties no longer fits the economic reality due to an unforeseen exogenous change of circumstances. In Israel the courts did intervene in some cases in which parties who failed to index their contract prior to the outbreak of hyperinflation found themselves with unadjusted contract prices that had little economic meaning. For example, in the case of She’oit,\textsuperscript{105} Appellant leased a parcel of land from the respondent on January 16\textsuperscript{th}, 1979.\textsuperscript{106} The contract included an option to buy the real estate at the end of the lease for a specified price denominated in Israeli Liras (the local currency at the time), which was not indexed.\textsuperscript{107} By the end of the lease hyperinflation caused the option price to reflect only 2\% of the market value of the land.\textsuperscript{108} The court ruled that it could adjust the option price as a condition for the enforcement of the contract, and required respondent to pay appellant $175,000 (note the use of \textit{dollars} by the court in 2002 when the ruling was delivered) in order to exercise the option.\textsuperscript{109} Another strand of indexing case law relates to situations in which the parties did adopt an indexing clause, but for some reason the clause malfunctioned (at least according to one of the parties) over the duration of the contract. In Alcoa,\textsuperscript{110} the parties entered into a long term contract for the supply of aluminum in 1967.\textsuperscript{111} The contract included an indexing that attempted to track Alcoa’s production costs by using an array of proxies.\textsuperscript{112} In the mid 1970s it became clear that the indexing formula did not track these costs since it did not fully account for the tremendous rise in energy costs at the time.\textsuperscript{113} By June of 1979 Essex was buying aluminum from Alcoa at 36.35 cents per pound and reselling it at 73.313 cents per pound.\textsuperscript{114} On the basis of several legal theories

\textsuperscript{105} C”A, 6136/00 She’oit v. Eshed, PD 56(4) 241. See also John P. Dawson, \textit{Judicial Revision of Frustrated Contracts: Germany}, 63 B.U. L. REV. 1039 (1983) (reviewing German law in the area); Renner, supra note 1 at 8-25 (reviewing the legal framework in several countries).
\textsuperscript{106} Id. at 244.
\textsuperscript{107} Id.
\textsuperscript{108} Id.
\textsuperscript{109} Id. at 245-47.
\textsuperscript{111} Id. at 56.
\textsuperscript{112} Id. at 57-8.
\textsuperscript{113} Id.
\textsuperscript{114} Id. at 59.
the court rewrote the price term of the contract, and allowed Alcoa to raise the price it charged Essex in order to assure it a minimal profit on the contract.\textsuperscript{115}

Ex post judicial intervention seems like a plausible way to deal with problems caused by pricing terms in long term contracts. As noted, ex ante it is in the best interest of both parties to design a price mechanism that will track market changes, and therefore it is quite reasonable to assume that both parties would agree ex ante to some sort of ex post intervention with the contract when it does not serve its purposes. Nonetheless, one should note two important drawbacks associated with court regulation. First, courts lack the information and expertise to fully understand all of the interests associated with long term contracts in order to recognize when a pricing mechanism has malfunctioned.\textsuperscript{116} Furthermore, even if courts can perfectly detect all cases that are worthy of intervention, it is doubtful that they will be able to design a new pricing scheme that will fit the parties’ needs.\textsuperscript{117} Take for example the case of She’o\textsuperscript{i}t. It is clear from the court’s ruling that the parties did anticipate some inflation, and that the option was designed to meet those expectations. Thus, simply adjusting the contract price to the new market conditions will not fulfill the transaction between the parties. Rather, the court (in 2002) must determine what was the parties’ subjective valuation of inflation at the time of contracting (1979) and set the new price accordingly. A daunting task by any means.\textsuperscript{118} A second problem associated with ex post judicial intervention is the high costs associated with it. Cases like Alcoa and She’o\textsuperscript{i}t are high stakes cases that justified turning to litigation. Yet once we turn to relatively low stakes cases, filing a lawsuit might not be justified given the costs of litigation. In fact, interviewees did not mention litigation as a common

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\textsuperscript{115} Id. at 80. Despite its central role in contract casebooks, courts in the United States have generally not followed Alcoa. See James J. White & David A. Peters, A Footnote for Jack Dawson, 100 Mich. L. Rev. 1954, 1977 (2002). In Israel the courts have yet to rewrite an indexing provision. In C’A 719/89 Machtzavot Haifa v. Han-Ron, PD 46(3) 305 the court recognized its general ability to do so through the good faith clause of the contract code. Id. at 314. Nonetheless, in the circumstances of the case, which involved a dollarization clause that malfunctioned as a result of new regulation, the court decided not to intervene. Id. at 314-5.

\textsuperscript{116} See, e.g., Renner, supra note 1 at 111-5 (presenting a skeptical view on the courts’ role in this respect).


\textsuperscript{118} A lesson on the limitation of courts in this regard can be learned from the aftermath of Alcoa as well. As Dawson reports the parties in Alcoa eventually declined to follow the courts ruling and renegotiated a new price provision. See id. at 29.
occurrence in the event of large changes in exchange rates. Thus, a policymaker might wish to explore ex ante measures that do not rely on litigation.

2. **Ex-Ante Policies**

If a policymaker aims to root out dollarization it must turn to measures that will cause the parties at the time of contracting to adopt an alternative design. A relatively unintrusive way to achieve this goal is by raising the costs of dollarization to the contracting parties. One way to do so is by raising information costs. As noted earlier, one of the reasons that dollarization is so convenient for the parties is the fact that everyday the Bank of Israel publishes the RER.\(^{119}\) Stopping the publication of the RER will not prevent dollarization, but it is likely to make it less convenient. First, it will force the parties to negotiate the precise alternative mechanism they will use in order to index the price to the dollar (e.g., the average of the ask and sell price of dollars at a certain bank). Second, the lack of a single focal point to which all contracts can be tied to may eliminate some of the current network externalities associated with dollarization. Furthermore, policymakers could create an alternative indexing focal point that players in the market will be drawn to. For instance, if the main point of indexing is to tie the contract price to the market price, then the ideal index is one that reflects real estate prices alone. Currently the ICBS actually produces such an index, but it is normally published as part of the CPI, and is not accessible to the general public. Drawing the publics’ attention to this index by utilizing the media and the Internet could create a true alternative to the dollar.

A second way to try to affect public behavior is by educating the public about the problems of dollarization. To some extent, the government can control the publics’ attention, and foster a discussion on the utility of dollarization. A national campaign calling people to turn away from dollarization (perhaps kicked off by the public act of halting the publication of the RER), and backed by non-political entities such as the central bank, could help shift the public from one equilibrium to the other. The possibility that a clear governmental act that is not backed by any sanction might be useful in this\(^\text{119}\) See supra note 24 and accompanying text.
context is a result of the unique dynamic of coordination games discussed above.\textsuperscript{120} Note that if players are in fact trapped in an inefficient equilibrium of a coordination game, it is in the best interest of every player in the game to shift strategies as long as all others do so. This is not the case in non-cooperative games such as the prisoners’ dilemma in which there might be a divergence between the collective interest and the individual interest. Thus, in a coordination setting it might be sufficient for a public figure to call on all players to switch strategies for them to do so.\textsuperscript{121}

Finally, policy makers may take a more intrusive path and intervene with the contracts by outlawing certain provisions. In 2002 the Israeli legislature went down this path amending the local Consumer Protection Law (CPL). According to the Amendment real-estate prices must be advertised in Shekels.\textsuperscript{122} Yet it should be noted that the CPL only applies to commercial parties selling real-estate.\textsuperscript{123} In other words, the Amendment regulates the market for new real estate, and leaves the secondary market that is controlled by private parties unregulated. Despite its limited scope, there were two reasons to assume that the Amendment could have brought about a change in market norms. First, a public legislative act, such as the Amendment, could trigger the expressive power of the law and signal to the public the need to collectively switch equilibrium. Second, once a significant part of the market was forced to move to shekels, some of the network effects associated with dollarization were expected to diminish. For instance, a family selling their house in order to finance a new residence no longer had a need to tie their selling price to the dollar in order to cover for changes in the buying market. Nonetheless, five years after the enactment of the Amendment it is rather clear that it did not bring about a significant change in the norms of the market, and the market continues to use dollars as the dominant pricing device. Furthermore, the application of the Amendment only to one segment of the market caused several unexpected problems.

\textsuperscript{120} See supra notes 76-78 and accompanying text.
\textsuperscript{121} See McAdams, supra note 76 at 1666-68 (pointing out that law does not need to employ sanctions in order to solve coordination games). For an empirical demonstration of this point see Richard McAdams & J. Nadler, Testing the Focal Point Theory of Legal Compliance: The Effect of Third-Party Expression in an Experimental Hawk/Dove Game, 2 J. Empirical Legal Stud. 87 (2005).
\textsuperscript{122} Consumer Protection Law §17B(b)(1).
\textsuperscript{123} Consumer Protection Law §1 (defining the application of the law only to those who are engaged selling of goods and services as a profession).
First, because most of the market continued using dollars, players in the commercial segment found themselves constantly converting shekel prices into dollars. As one newspaper reported:

The ceremony – that might look odd to an outsider – did not surprise the salesperson at the construction sight in Petach Tikva: The couple entered the office and asked about the price of the apartment they liked. The salesperson answered with a shekel price. The couple, in their forties, explained that the shekel price is meaningless, and asked him to translate it into dollars. The salesperson gave them a calculator that was on his desk and told them what the exchange rate was. The couple converted the price into dollars, said that it was too high, and left the office.\textsuperscript{124}

Brokers working for constructors save buyers the time and simply present prices in dollars. As one of them stated: “When I present a new apartment to my customers I always convert the price to dollars before hand. If I don’t do that they’ll ask me to do that anyway. I can be a little off the exact price, so it isn’t a problem.”\textsuperscript{125} This type of behavior reflects the main concern regarding legislative intervention in private contracts. The legislation ends up achieving nothing but piling up more costs on the parties who attempt to circumvent it. A second unexpected effect of the legislation was the creation of temporary instabilities in the market because of the two pricing systems. New apartments and second hand apartments are substitutes. Thus, there is a direct connection between the price of one, and the demand for the other. If, for instance, the prices of second hand apartments drop, then the demand for new apartments is expected to decrease as consumers shift there demand to the second hand market. Such arbitrages between the first hand and second hand markets became quite common as exchange rates became more volatile. In mid-2003, for instance, the dollar dropped from approximately 5 shekels to the vicinity of 4.5 shekels in a relatively short period of time. This quick drop caused a significant decline in demand for new apartments as the prices of second hand apartments denominated in dollars fell.\textsuperscript{126} According to one leading mortgage firm, during that period the share of second hand apartments in the market rose from 70%-75% to around

\textsuperscript{124} Mirovski, \textit{supra} note 21.
\textsuperscript{125} See Broker Interview #1.
90%. To be sure, over time the two markets are expected to converge into a new equilibrium reflecting actual demand and supply. Nonetheless, the intermediate periods could lead to inefficiencies such as unnecessary stagnation in the market.

Given the problems with the existing legislative scheme there are growing voices calling for new legislation that will outlaw dollarization in all real estate contracts. To the extent that such legislation will be enacted, there are several lessons that can be drawn from this case study. First, if dollarization is indeed harmful then one would expect that following the legislation the market will stabilize around the shekel. If that will not be the case, and parties will try to circumvent the legislation, that can be interpreted as an indication that dollarization is efficient. Thus, the legislation should probably apply for a relatively short period of time, and include a sunset clause. Second, the focus of legislation should not be on high sanctions and stiff enforcement. Rather, it should be on employing the expressive function of the law, by making it visible and clear, in order to create a new focal point for real estate contracts.

V. CONCLUSION

In this Article I presented a case study of dollarization in the Israeli real-estate market. Using both quantitative and qualitative data I attempted to flesh out some of the intricate causal issues arising from a complex social phenomenon. The main observation was that despite tremendous changes in the economic reality, the dollarization norm in the Israeli real-estate market remained surprisingly stable. Given the complexity of the phenomenon, the analysis could not pinpoint a single explanation for this observation. Nonetheless, it was able to suggest several potential ones, and explore the relation between them. Taking a step back and viewing the body of explanations coupled with the

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127 Maor, id.
129 To be sure, as this study points out, failure to contract out of a legal rule does not demonstrate the efficiency of the rule. Hence, one will not be able to conclude from a failure of parties to try to circumvent the suggested legislation that such legislation is in fact efficient.
behavior observed in the market, has led me to argue that it is highly probable that currently contracts in the market are not structured efficiently.

As I emphasized at the outset, the goal of this project was more ambitious than to merely tell the story of one market. The case study presented offers several lessons regarding contracting and contract law. One of these lessons is that social norms play a significant role in the structuring of high stakes contract, and that contracting around these norms, much like contracting around legislative default rules, might be trickier than traditional contract theory would have us believe. This insight led to a new understanding of the role of contract law as a way to assist parties to move out of inefficient contracting behavior. In this regard, while one might disagree with the specific market analysis presented in this article, the general argument for the potential justification for intrusive contract regulation aimed at assisting the parties to overcome inefficient norms remains firm.

The Article also sets the ground for future research dealing with dollarization in other markets both within Israel and abroad. Abroad, additional studies could explore similar contracting behavior in countries that suffered from hyperinflation such as many South American countries. In Israel, subsequent projects could study other types of contracts. For instance, while the prices of some services in Israel (such as legal representation) are still mostly quoted in dollars, the prices of other services (such as psychological counseling) are quoted in shekels. Similarly, while real estate prices continue to be quoted in dollars, car prices have shifted from dollars to shekels. Comparing and distinguishing between these and other cases could help deepen our understanding regarding the role social norms play in the area of contract design.