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STUDIES ON REGULATION

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TABLE OF CONTENTS

Iris Soroker & Inbar Gotlib Rivkin	<i>The Right to Repair: Editors' Introduction</i>	9
From the Desk of Prof. Meir Heth	<i>Concentration in the Institutional Investors Market</i>	19
<i>Sustainability and Environmental Protection</i>		
Gideon Behar	<i>Greetings</i>	23
Orr Karassin	<i>How the Circle Turns – The Circular Economy and the Regulation of a New Economic-Environmental Model in Israel</i>	25
Ofira Ayalon, Hagit Snir-Salinger, Vered Eyal-Saldinger & Naama Shapira	<i>Industrial Symbiosis – Barriers to Implementation in Israel</i>	95
Meital Peleg Mizrahi & Alon Tal	<i>Environmental Justice, Consumption and Ecological Footprint: The Regulatory Implications and Relationship between Socio-Economic Ranking and Sustainable Consumption</i>	119
Artyom Jelnov & Limor Hatsor	<i>Efficient Implementation of Industrial Symbiosis</i>	167
Hilit Katz	<i>The 2018 Electricity Reform</i>	199
<i>Intellectual Property and Competition</i>		
Ofir Alon	<i>Greetings</i>	249
Miriam Marcowitz-Bitton, Yifat Nahmias & Tehila Rozencwaig-Feldman	<i>Regulation of the Pharmaceutical Market in Israel</i>	251
Lior Barukh, Maayan Perel & Niva Elkin-Koren	<i>Competition and Power Discrepancies in the Israeli Digital Music Market</i>	331

Orit Fischman-Afori, Yifat Nahmias & Iris Soroker	<i>Empirical Examination of Patent Prosecution in Israel: Opening the Black Box</i>383
Ofer Tur-Sinai	<i>Patent Term Extensions for Pharmaceutical Patents in Israel: Twenty Years of Amendment No. 3 of the Patent Law – Trends and Evaluation</i>429
Or Cohen-Sasson	<i>The Continuous Disclosure Doctrine: Patent Law and Competition in the Age of Big Data</i>481

Abstracts

Orr Karassin, *How the Circle Turns –The Circular Economy and the Regulation of a New Economic-Environmental Model in Israel*

This study examines the evolution of the circular economy model in Israel, analyzing the barriers to its expansion, with an emphasis on regulatory barriers. Although the circular economy has the potential of providing vast gains in terms of efficiency in production and consumption processes while reducing waste and environmental pollution, moving beyond the linear economic model is not occurring autonomously. Supportive policies are required to create markets, provide incentives, and apply mandatory requirements that support the closing of the material cycle. These policies are examined in relation to the stages of the cycle, starting with raw material mining, through product design, production, and consumption, and ending with the use of by-products, by means of waste reduction, reuse, repair, and recycling.

In Israel, the Governmental Decision on Green Growth of 2011 was the landmark policy that stimulated the discussion on the move towards a circular economy. This was followed by the Green Growth Policy of 2013. However, implementation of this policy document has been slow, with many of the necessary regulations either delayed or derailed.

In this study we interviewed 32 stakeholders and experts. Our analysis of these interviews and more than 50 legislative and policy documents indicates there are three principal areas in which the absence of supportive regulation effectively impedes the advancement of a circular economy in Israel. First, there is a lack of regulation which would encourage the creation of an active market for secondary materials and make these materials more attractive through the price mechanism. Second, there is an absence of standards for product design promoting a circular life cycle, reuse, repair or recycling of product materials, necessary for contributing secondary materials to the market. Third, policy needs to improve the internalization of costs of waste landfilling, allowing recycling to become a more attractive option. Yet, even if these changes in regulation do occur, they will not serve as a panacea, but as a crucial first step towards a circular economy. Profound and ongoing changes in existing policies are necessary to create the interfaces between stages of the material cycle and support closing the loop.

Ofira Ayalon, Hagit Snir-Salinger, Vered Eyal-Saldinger & Naama Shapira, *Industrial Symbiosis – Barriers to Implementation in Israel*

Industrial symbiosis is based on cooperation between industries and businesses that produce waste, surplus water or energy, by-products from production processes, and more. Companies trade these by-products or waste, reduce the use of virgin raw materials, and thus “close the circle” to create a situation closer to zero waste. The main benefits of industrial symbiosis are cost savings of regulated treatment (such as chemical stabilization), transportation costs, landfill costs, and landfill tax. In addition, there is a benefit of saving virgin raw materials.

Industrial symbiosis produces a win-win situation, enjoyed by everyone. However, there are many barriers to realizing the potential of these benefits.

This study, which took place during the years 2019 and 2020, deals with the identification of regulatory barriers that affect the operation of industrial symbiosis in Israel.

In an online survey conducted among 75 manufacturers, managers, and engineers from a variety of industries, respondents were asked to rate regulatory, economic, organizational, and other barriers.

This article focuses on the findings that have emerged from the survey and the policy tools required to advance industrial symbiosis.

The main findings show that over 75% of respondents are familiar with the terms “circular economy” and “industrial symbiosis”, compared to only 40% who are familiar with the European directive which defines the term “end of waste”; an essential definition to be included in legislation aimed at promoting industrial symbiosis and a circular economy.

About 80% of respondents state that the lack of government incentives is a significant barrier to the implementation of industrial symbiosis processes. Additionally, about half of the respondents think that the standards, regulations, and certifications required for the use of hazardous substances constitute a barrier to implementation, and 39% think that the need for a hazardous materials permit to perform symbiosis presents another barrier.

The establishment and operation of an information platform on waste streams are rated as the most efficacious regulatory factor (identified by 44% of respondents). Interviews with four senior officials in the Ministry of Environmental Protection and the Ministry of Economy also support the above findings and it is apparent that they identify similar barriers.

Meital Peleg Mizrahi & Alon Tal, *Environmental Justice, Consumption and Ecological Footprint: The Regulatory Implications and Relationship between Socio-Economic Ranking and Sustainable Consumption*

This research assesses how socio-economic status influences patterns of sustainable consumption within the broader context of environmental justice. The study evaluates the relative contributions of Israel's different socio-economic deciles to the country's collective ecological footprint and presents environmental policy and regulatory recommendations. The recommendations are based on the difference in consumption patterns found among different socio-economic groups and populations within Israeli society.

The research defines sustainable consumption on the basis of four of the world's most polluting industries: *the meat industry, the textile and fashion industry, transportation and residential consumption of energy*. The ecological footprint of each sector in Israel was characterized through an extensive survey. The study used both quantitative and qualitative research methods and relied on the results of questionnaires that were answered by 600 respondents, along with semi-structured, follow-up personal interviews with 25 of the participants.

The results of the research reveal significant gaps in the consumption patterns of different Israeli socio-economic deciles in disparate areas: relatively inexpensive consumer items, such as food and textiles tend to give lower socio-economic consumers a *higher* ecological footprint with great environmental impact. In contrast, in the area of transportation and sustainable residential living (due to their high associated energy consumption levels) wealthier socio-economic deciles display a significantly larger ecological footprint, producing negative environmental effects.

In-depth interviews elicited an additional, important variable: *environmental involvement*. We define this variable as "knowledge about the topic of sustainability, the holding of positions that are aligned with an environmental agenda and routine, environmentally friendly behavior which reduces individual ecological footprint." Low and medium levels of *environmental involvement* are observed at high levels among the higher socio-economic deciles, while *high environmental involvement* are observed equally across the different deciles. *Low to medium levels of environmental involvement* are manifested in activities that have a modest overall effect on ecological footprints, such as recycling and purchasing of "green" consumer products. This contrasts with the *high levels of environmental involvement* that are reflected in a greater personal commitment that requires a personal change in routine, for example, forgoing private vehicles, a meaningful reduction in consumer purchases, or transition to a vegan diet.

Among the central factors predicting these changes are the social benefit received, a supportive physical infrastructure and economic capacity. The interviews also confirmed that the price of a consumer product remains the central consideration among all deciles, who share a low awareness regarding sustainable consumption knowledge and its application.

The findings of the research suggest that for optimal success, a regulatory strategy and policy seeking to increase access to sustainable consumption options must be designed to meet the circumstances of a given socio-economic decile. In addition, there is room for greater governmental involvement in promoting sustainable consumption in the areas of education and behavioral economics, with a focus on supporting poor populations.

Artyom Jelnov & Limor Hatsor, *Efficient Implementation of Industrial Symbiosis*

The question considered by this study is how to apply industrial symbiosis successfully and the most appropriate platforms for this purpose. We analyze the industries within which it would be valuable to apply industrial symbiosis and those where such application might cause harm to the environment and therefore require the development of new technologies prior to such a process taking place.

Manufacturing processes may be divided into two principal categories in terms of the value in applying industrial symbiosis. The first category relates to manufacturing processes that require industrial symbiosis in order to improve the environment. The challenges here may take the form of behavioral psychological barriers (difficulty in adopting new technologies), information barriers (lack of information or awareness about potential buyers for byproducts), or regulatory bureaucratic barriers. In this context, we also examine how competition levels in the economy influence incentives for firms to adopt industrial symbiosis.

Paradoxically, the second category of manufacturing processes relates to industrial symbiosis that is harmful to the environment. This outcome occurs when the manufacturing technologies are highly polluting and the percentage of byproducts that are recyclable or reusable is relatively low. In these cases, the recommendation is to encourage the development of new technologies prior to the application of industrial symbiosis. This ensures the implementation of efficient and successful industrial symbiosis that will reduce potential pollution and better serve the environment.

Hilit Katz, *The 2018 Electricity Reform*

In 2018, after nearly three decades of multiple unsuccessful attempts to reform Israel's electricity sector, a reform was finally launched with the enactment of Amendment No. 16 to the Electricity Law. This article examines the current implementation of the 2018 electricity reform in different areas of the Israel Electric Corporation's (IEC) activities. The reform is still an ongoing process, and its implications for the economy have yet to be examined. However, its economic effects over the past two years, including electricity tariffs, market competition, and the financial and humane impact on the IEC can be estimated. Similar processes that have taken place in OECD countries can also provide insight into the implications of the reform.

The aims of the reform set forth in the new law reflect the goals of the many public committees that had previously examined the electricity sector in Israel over the years. These committees had all reached the similar conclusion that the public interest would be served by opening up the electricity sector to competition. Doing so would also enhance the efficiency of the IEC, a government company with a natural monopoly of Israel's electricity market.

Due to the electricity sector's monopolistic structure, the IEC has long operated inefficiently and ineffectually. Suffering from unusually high costs for operations and human resources, its resulting precarious financial situation has made it difficult for the company to meet its growing investment and financing needs. Consequently, the company has been unable to develop needed expertise and capabilities, thus raising concerns about future electricity shortages.

An analysis of the effect of the reform since its implementation indicates that after selling some of its production sites to private producers, the IEC has strengthened its financial resilience by reducing its deficit. It has also begun regulating labor relations and returning power to management. Even with its limited moves toward privatization, the IEC remains an essential player in electricity production and transmission. Retaining its natural monopoly in the market, the IEC still has a significant and decisive impact on Israel's electricity sector.

The main conclusion that emerges from comparing electricity reforms in the United States and other European countries is that reforming the electricity sector alone, without considering the introduction of alternative energy sources, will not lead to lower prices for consumers. Nonetheless, electricity prices in Israel may still fall with the continued implementation of Israel's electricity sector reform, along with further changes in the electricity market, such as the transition to renewable energy sources, and the opening of the electricity sector to alternative energy producers.

Miriam Marcowitz-Bitton, Yifat Nahmias & Tehila Rozencwaig-Feldman, *Regulation of the Pharmaceutical Market in Israel*

Late in the year 2000, the Israeli legislature enacted a reform authorizing the parallel importation of pharmaceuticals. The prevailing assumption at the time was that allowing parallel imports would lead to a significant drop in drug prices and reduce healthcare costs in the country.

This article presents an empirical study of Israel's experience with parallel importation of pharmaceuticals, examining the effects of the country's regulatory reforms and the practical impediments to applying the mechanisms created to facilitate parallel importation. Combining quantitative methods, interviews, and a comparative law study, this article makes several important contributions concerning the interaction of parallel imports and price regulation of drugs.

Our first key finding is that there has been almost no parallel importation of pharmaceuticals into the State of Israel in the over twenty years since such imports were authorized. Essentially, despite reforms intended to incentivize competition in the Israeli pharmaceutical market through parallel importation, competition in this sector remains close to nil. We attribute this to a number of barriers to parallel importation in the Israeli market, including regulatory barriers, contractual barriers, and barriers resulting from information asymmetry. Nevertheless, our study reveals that even without the expected influx of parallel imports into the market, the maximum price of most prescription drugs in Israel decreased between 2007 and 2020 and that Israeli public health funds typically buy medications for less than their maximum prices. Consequently, we conclude that opening the Israeli pharmaceutical market to parallel imports may have had an indirect effect on drug prices by improving the bargaining power of these key market players and increasing competitive pressure on manufacturers.

Our study concludes that while regulatory reforms enacted with the intention of cultivating a vital industry of parallel drug importation did not achieve that result, they may nonetheless have helped control drug prices. It also highlights that the issue of the viability of parallel importation in a price-regulated market warrants further scholarly investigation into the conditions under which such importation can take place.

Lior Barukh, Maayan Perel & Niva Elkin-Koren, *Competition and Power Discrepancies in the Israeli Digital Music Market*

Much of music market activity today takes place on global digital platforms, such as YouTube. Holders of copyrights in musical works often contend that the shift to the digital distribution and consumption of original music has considerably decreased their

income. To better understand and assess the accuracy of this argument, this article provides an in-depth legal and economic analysis of the contractual relations underlying the Israeli digital music market. It identifies serious power discrepancies between rights holders and digital platforms that should be addressed by the Israel Competition Authority. Because copyrights in musical works produced in Israel are managed mainly by collective management organizations, such as the Society of Authors, Composers and Music Publishers in Israel (Acum), this research focuses on the discrepancies in bargaining power between these organizations and YouTube, the most dominant platform in the Israeli digital music market.

The recent Amendment 21 to the Israeli Economic Competition Act, passed in January 2019, offers a new opportunity to analyze these power discrepancies. This amendment expands the legal definition of "monopoly" to include actors with significant market power. This article recommends that the Israel Competition Authority exercise its newly expanded authority and perform a thorough examination of YouTube's market power in general and, specifically, the exercise of its contractual bargaining powers against Israeli collective management organizations. Furthermore, the article suggests that this is an opportune time for the Israeli Competition Authority to follow global trends emerging in the United States and Europe and investigate the power of global digital platforms in the Israeli creative arts market.

Orit Fischman-Afori, Yifat Nahmias & Iris Soroker, *Empirical*

Examination of Patent Prosecution in Israel: Opening the Black Box

Because a patent is a license for a monopoly affecting the public good, the process of patent prosecution deserves close scrutiny. Yet, significant aspects of this process remain unexplored. In particular, two central thresholds for patent eligibility, "novelty" and "non-obviousness", regarded as the bedrock of patent law worldwide, have rarely been examined on an empirical basis. Investigating how these requirements are invoked during the patent prosecution process is critical to understanding how the application of patent law's central tenets affects the quantity and quality of the resulting patents and, ultimately, the public interest.

In this empirical study, we examine a representative sample of utility patent applications filed with the Israeli Patent Office (ILPO) between 2012 and 2019 and quantify the occurrence of various grounds the examiner asserted for rejecting the applicants' claims. We further investigate the patent office's reliance on "non-novelty" and "obviousness" as grounds for restricting or rejecting patent claims, and we examine the progression of patent applications subject to such determinations.

Our results are thought provoking in two, interrelated respects: First, we found that obviousness – a mixed question of law and fact – was by far the most common basis for

office action rejections, a result we observed consistently when controlling for variables such as the field of invention, the characteristics of the applicant, and the final disposition of the application. Second, we found that while office action rejections often lead to the narrowing or abandonment of claims in ensuing exchanges between the applicant and the examiner, at the end of this process, most applicants overcome the rejections, and a patent, even if narrowed, is granted. These findings reveal that the interplay between the applicant and the patent office is akin to a negotiation – and that this negotiation generally culminates in at least some measure of success for the applicant.

These observations have important implications for patent policy and practice. The predominance of obviousness as a ground for office action rejections, and the ensuing negotiations between the examiner and the applicant underscore that patent prosecution involves significant legal analysis in addition to technological expertise. The frequency with which disputes over obviousness arise in the course of patent prosecution suggests that clarification of the standard is imperative. This requires further development of the doctrine by courts; yet in practice, the patent office's decisions are rarely subject to judicial review. Therefore, there is a pressing need to encourage greater judicial oversight of patent office decisions. The need for doctrinal clarity is particularly acute in view of efforts to integrate advanced computational technologies (such as artificial intelligence systems) into the patent prosecution process. It is questionable whether these technologies may be used to support examiners' legal analysis, especially considering its uncertainty.

Moreover, our study suggests that patent examiners – whose role is to grant or reject patent applications in an objective manner that reflects interpretations of the law made by courts – may find it difficult to exercise their function consistently due to the individualized give-and-take that occurs in case-by-case negotiations with applicants. Accordingly, policymakers may wish to consider whether to impose limits on such negotiations to ensure that decisions by the patent office are free from the influence of applicant “bargaining”, and produce predictable results that maximize the public good

*Ofer Tur-Sinai, Patent Term Extensions for Pharmaceutical Patents
in Israel: Twenty Years of Amendment No. 3 of the Patent Law –
Trends and Evaluation*

Since 1998, Israeli patent law has provided owners of pharmaceutical patents an option to apply for patent term extensions (PTEs). This legal arrangement is designed to compensate patent owners in this field for the lengthy period needed to obtain regulatory approval for a patented drug. The PTE provisions of the Israeli law have been amended several times since their enactment in 1998, sometimes in response to

international pressure. Various legal questions related to PTEs have been addressed in judicial rulings and Commissioner of Patents' decisions. While other legal systems offer the option of obtaining a PTE, countries differ in the details of their legal arrangements and how they are applied. Extending the patent term can have significant implications for the incentives of different players, as well as an impact on competition in the pharmaceutical market. By presenting and analyzing data accumulated in the last twenty years regarding how the PTE regime has been implemented in Israel, this Article advances the ability to evaluate its impact on pharmaceutical markets.

Or Cohen-Sasson, *The Continuous Disclosure Doctrine: Patent Law and Competition in the Age of Big Data*

The changing technological landscape challenges the law, usually with issues lawmakers did not consider in advance when formulating the law. This article addresses the challenges that patent law – and especially the disclosure requirement – faces due to the emerging technological environment of Big Data, chiefly because of big data's scientific and commercial value in the current innovation arena. The disclosure requirement is a key instrument in the patent system, designed to publicize full knowledge regarding a patented invention. The disclosure requirement meets its goal in the context of classical or traditional technologies, such as mechanical inventions. However, the disclosure fails, at least partially, regarding big data-based inventions, namely, cases in which one must heavily rely on big data to understand and utilize an invention properly. The partial disclosure limits the capacity of others – i.e., non-patentees – to exploit the invention adequately, even after the patent expires. The reasons for the partial disclosure are anchored in structural features of the disclosure requirement: the temporal dimension and the static dimension. After discussing these structural features, the article analyzes the ramifications of meager disclosure in the interplay of patent law and competition. One major problem in this context is that partial disclosure enables patentees to carry out monopolistic practices, exceeding the appropriate monopolistic boundaries of a patent. Thus, the partial disclosure adversely affects the free market, although the patent has expired or been invalidated. This article offers the continuous disclosure doctrine as a resolution for the big data-patent law incompatibility. The continuous disclosure doctrine requires disclosing all knowledge required to utilize and invention, regardless of the timing, provided that the patent is still valid.