

The Push for Distributive Sensitive Innovation Policies in Israel and Korea

IEP memo for Switzerland, February 2-3 meeting

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Can innovation be guided to develop in directions that would produce more equitable societies? Could innovation policies play a central role in achieving this? These questions have animated research that focuses on Distribution Sensitive Innovation Policy (DSIP) or inclusive innovation policy (George, Mcghan and Prabhu 2012; Klingler-Vidra, Glennie and Lawrence 2022; Lee 2023; Lowe and Wolf-Peters 2018; Zehavi and Breznitz 2017)¹ as well as growing interest in such policies in different advanced industrial countries (European Commission 2020; Innovate UK 2023; Innovation, Science and Economic Development Canada 2016). In academic publications, usage of the term "inclusive innovation" has risen precipitously over the last few years (Lee 2023) and in the policy sphere there is a growth in the number of programs that fall under the heading of inclusive growth, or DSIP, all around the world (LSE Consulting 2018; Planes-Satorra and Paunov 2017). Both experience and knowledge of DSIP has begun to accumulate.

There are, however, significant gaps in our knowledge of DSIP. Perhaps most prominently, while there are already a substantial number of programs operating, we know very little about their efficacy and success. This is not surprising considering that DSIPs, or at least those that have been *intentionally* established to further distribution-related social goals, were established only very recently. Not only is there little data to use for evaluation studies, but it is not even clear what information about program performance should be collected to enable such studies. A second gap focuses on the circumstances under which governments, at all levels, establish DSIPs. The surge of interest in inclusive innovation is primarily expressed in government rhetoric, but it is also manifested in policy. We know very little about why governments are motivated to launch specific innovation programs that could benefit different categories of disadvantage.

These gaps lead us to ask the following three questions:

1. *Why* have governments moved to adopt DSIP? The obvious answer appears to be because they wish to address – whether for ideological or political reasons – issues of inequality and social exclusion, and traditional redistributive measures are insufficient on their own. However, there could be other reasons for initiating such policies. For example, the establishment of DSIPs might be a byproduct of governments pursuing economic objectives. Governments may seek to make innovation more inclusive because it would mean more productive economic participation for more people and as a result higher economic growth (Zehavi and Breznitz 2017). We should also consider the reasons for why DSIPs do *not* emerge. Beyond the fact that institutional inertia is a force to contend with, there are different factors that make the emergence of DSIPs less likely. One reason is that policy makers fear that "more inclusion" would come at the expense of "more growth". Another is that policy makers prefer broad infrastructure building policies to support weaker elements/regions such as

¹ We use DSIP and inclusive innovation policies interchangeably throughout this memo.

increasing investment in education or the internet infrastructure. Finally, we should take into account that past policies produce political and economic path dependencies. For example, an attempt to redirect government R&D funding from established firms to SMEs would likely face strong opposition from the larger firms.

Addressing the *why* question is important to begin to understand the political-administrative decision to pursue DSIP. What factors matter in such cases? Theories of the policy process would be helpful here as they could speak to both policy dynamics (e.g., path dependency, institutional conversion) and actors (e.g., international epistemic communities, domestic pressure groups).

2. *What* type of DSIPs are created and for what reasons? While many countries may encounter the same general challenge – for instance, 'rising inequality' – its more specific contours as well as its determinants could vary significantly across countries. As a consequence, the form that DSIPs take will vary. For example, a country that suffers from significant spatial inequalities is more likely to produce DSIPs focused on supporting disadvantaged regions than a country with less spatial inequality. However, we should be wary about adopting wholesale a simplistic functionalist approach in which the reason for program X is that there is an objective need for program X. Differences in institutional and political factors are likely to matter greatly not just for explaining whether a specific type of DSIP emerges, but also for understanding its characteristics. For example, in the case of regional DSIP – e.g., smart specialization innovation programs for relatively less-developed regions – the choice of cities/regions in which the government would invest could depend on local leadership's political influence at the national level.
3. *How* well have these programs fared in terms of both their socio-economic equalizing effects and in terms of their growth/resilience? DSIP is at the stage that it requires proof of concept. Evaluation therefore matters greatly. Clearly, evaluation studies are problematized by the influence of external factors over which there is little control (e.g., macro-economic conditions). Nevertheless, some studies could shed light on program success. For example, if governments support innovation in some SMEs, according to some threshold criterion, it might be possible to use a regression discontinuity design to evaluate the efficacy of government support. It is also important to examine whether programs persist in a significant way. One possible problem is that government establishes DSIPs only to discontinue/defund them before they are even evaluated. What leads to this? How is this avoided?
The 'how well' question is of great interest, but at the very least socio-economic evaluation necessitates access to quality data and for such data to exist requires that the programs a) collect the data, and b) do so for an extended period of time. We expect, therefore, that addressing the 'how' question would demand several years of research.

Case Selection

As we intend to study a relatively new phenomenon, which implies that available quantitative data would be meager, we propose to explore these questions by exploring in depth a small number of case studies. We focus on two countries that are obviously convenient, but their selection is easily justified with reference to their political economies. There is reason to expect that DSIPs would be especially relevant in countries that a) suffer from high levels of

exclusion/inequality and b) innovation and innovation policy play a central role in their economies. For this reason, we chose Israel and Korea; two countries that suffer from high inequality with highly innovative economies. As will be discussed below, governments in both countries have for many years now been highly active in promoting innovation through a range of different programs.

The two countries are two of the exceptional 13 economies that had started from middle income countries in the 1960s but sustained growth beyond the middle income trap and joined the status of a high income economy (World Bank 2012: 12). Now, the two countries are similar in terms of affluence with both boasting per capita incomes that place around the average of the OECD pack (see <https://data.oecd.org/gdp/gross-domestic-product-gdp.htm>), with a high degree of inequality (top 10% share), as shown in the Table below. Further, Israel and Korea both face significant security-related external threats. This state of affairs has been associated in research literature with both a strong incentive to innovate (Taylor 2016) and to maintain low levels of inequality and high levels of social solidarity (Obinger, Petersen and Starke 2018).

Comparing Israel and Korea: economy, innovation and inequality

	Israel	South Korea
R&D as share of GDP (2020)	5.4 (ranks 1 st)	4.8 (ranks 2 nd)
Global Innovation Index (2022) ranking	16	6
Gini index (2021)	0.34 (ranks 29 of 38 OECD)	0.331 (ranks 27 of 38)
Share of the Richest Top 10% in Pre-tax national income – Wid.World (2016)	47.8%	36.7%
GDP per capita (PPP, 2017)	38,868	38,824
External threat (no use of index)	high	high

We believe that the similarities between the two countries do not end with such macro variables. There is a striking similarity in the role that innovation policy played in the two countries - generating growth trajectories that have led to the development of DSIPs.

Israeli public agencies, from the end of the 1960s onward, have played a leading role in the development of its highly successful high-tech sector. Government motivation was spurred by the realization that given the state's relatively precarious geo-strategic position, it must become more self-sufficient in weapon systems' development. No less importantly, Israel's political leadership recognized that the key to the creation of a thriving economy was private-led innovation. Over the following decades, different government actors/agencies, primarily the Office of the Chief Scientist (OCS) pursued a range of policies dedicated to boosting private sector R&D regardless of industrial sector and technology (Justman and Teubal 1995; Teubal 1997). Taken together, these policies proved to be wildly successful and helped Israel leapfrog to the international innovation frontier (Breznitz 2007).

However, by the 2000s it became clear that Israeli innovation had clear weaknesses. While Israeli companies integrated well into international value chains, their connection to the

domestic economy was slight. Domestic spillover effects from Israeli-made R&D were disappointing. Relatedly, it became increasingly apparent that Israel's R&D boom in the 1990s gave birth to a high-tech elite, but far more Israelis were left behind. Since the mid-aughts, some discussions in innovation policy circles – within government and without – centered on the question of what could be done to address the exclusion of most Israelis from the practice and fruits of innovation (Zehavi and Breznitz 2017). These discussions constitute the backdrop for the establishment of DSIPs that focused on a range of different goals: supporting innovation in the moribund traditional industries where there is a high share of lower-skilled workers; encouraging the establishment of minority-owned and operated startups; spurring innovation in less developed regions and towns, and more. More recently, the Israel Innovation Authority (the successor to the OCS) established the Societal Challenges Division to administer all activities aimed at addressing social and environmental challenges. This development constitutes a conscious re-orientation of the agency's activities from being almost exclusively geared toward increasing aggregate R&D activities to a more socially balanced portfolio.

Suffering from four decades of colonial rule and three years of civil war, South Korea was one of the poorest countries in the 1950s and 1960s with agriculture accounting for most of its GDP. However, it quickly took off first by labor intensive manufacturing and exports and then by moving to more capital and knowledge intensive sectors (Lee 2013). It is now one of the most innovative economies with its R&D to GDP ratio higher than 4% and ranking 4th in number of US patents. However, its growth has been dominated by large firm export-oriented manufacturing while its domestic market, SMEs and services have been relatively neglected. This growth regime has led to increasing inequality and polarization since the 1997 Asian financial crisis when the economy was subject to a radical opening imposed by the IMF conditionalities.

Since then, the Korean government has shifted its policy toward stimulating and promoting SMEs and startups and services, besides increasing investment in welfare expenditure (Wong and Lee 2018). The government created the secondary and tertiary stock market so that startups may be easily listed, as well as public-private joint venture capital and various incubating policies, including those targeting women entrepreneurs (Park 2018). In particular, Korea established a separate ministry in charge of SMEs and Startups and a ministry in charge of female and family issues. This ministry has been aggressively introducing the “Smart Factory” system to support laggard SMEs so that they may enhance their competitiveness by adopting digital and intelligent manufacturing systems. Further, it created the so-called “Creative Economy Innovation Center” in all provinces where each center is matched with one big business (Chaebols) so that one may expect some synergies between big businesses and SMEs (Lee 2024: Ch. 6).

In sum, Israel and Korea are obviously not peas in a pod, but they are similar in being economic late developers fueled by a vibrant innovation economy, with exceptionally high R&D investment rates, but facing challenges in controlling inequality. Governments in both countries played important historical roles in moving the national economies from factor-intensive to innovation-intensive growth trajectories. Both governments, in other words, chose innovation-centered industrial policy and have experienced success. This has brought about both economic prosperity but also high levels of inequality and exclusion. In recent years, there has been some movement toward more distribution-conscious policies. These

circumstances and developments make both countries appropriate case studies for research focused on DSIPs.

In some respects, differences between the two countries led to different needs/'patterns of exclusion' and therefore to DSIPs that exist in one country, but could not be expected to have a parallel in the other. This would be the case of the DSIP for minority-established startups that exists in Israel, but is unlikely to emerge in Korea where the population is relatively homogenous. Most of our attention would be dedicated to areas in which there is a parallel "need" in both countries, which could lead (or not) to DSIPs with roughly similar objectives. Below, are three examples of such areas:

- DSIPs intended to increase the share of women in technological innovation activities. It should be mentioned that in both countries the share of women in S&T is low (generally typical of the situation in advanced economies), but in other respects the two countries are very different. A very important difference is that while Korea has the lowest fertility rate in the world, Israel has the highest among OECD countries. This difference is likely to affect government objectives related to women's involvement in the labor market.
- DSIPs related to regional/spatial inequality.
- DSIPs intended to support struggling industries with a high share of lower skilled workers.

Expected outcomes and contributions

This research is intended to have two components that are associated with different research questions. The *why* were DSIPs established (or not) and the *what types* of DSIPs questions motivate a comparative study of the two countries focused on the dynamics of program formation, establishment rationale, opposition, and perhaps what led some DSIPs to wither and disappear. This research will draw on, and contribute to, the innovation policy and innovation politics academic literatures. As will be detailed below, research methods for this component would be qualitative. Work will begin in the coming months (we will apply for a catalyst grant to facilitate this). We hope to be able to reach the publication stage within 1.5-2 years. The number of publications generated by this project would naturally depend on what we find. For example, there might be justification for a separate article that would focus on DSIPs for traditional industries, but there might not be enough "meat" to justify a separate contribution.

The second component of the project would focus on the *how well* question. Obviously, this is a question that is of particular interest to policy makers. Answering this question depends on the existence and availability of relevant data. We will begin by scoping the data that exists for the different programs. If applicable, we may recommend to agencies to collect data for certain measures that were not previously collected. For example, in the context of DSIPs for women, the number of children that participants in these programs have. Considering that DSIPs tend to be new programs, it is more than likely that obtaining the necessary data, and analysis, would take some time – hence, this is more of a long-term project.

Moreover, in the medium-long run more countries could be added to the study. While the choice of Korea and Israel is well-justified, other systems present different circumstances and

potentially other pathways and outcomes for DSIPs. For example, several years ago in interviews in Sweden, Amos was asked why would Sweden require DSIPs given its relatively high, albeit declining, level of equality. Nevertheless, Sweden has launched DSIPs in some areas invoking the *why* and *what* questions.

Methods

To address the *why* question, we plan to process trace the events that led to the adoption and evolution of specific DSIPs. We are also interested in studying 'failed' programs: "the dogs that didn't bark", failed attempts to establish programs, and termination of programs. The research will be based on document analysis, government and other, as well as the use of interviews with policymakers and other relevant stakeholders (e.g., union representatives, women groups, etc.). The study design is quasi-comparative in the sense that in some cases there would be a straightforward pairing of programs in the two countries (e.g., support for regional innovation in struggling areas). In others, however, there would be no clear parallel programs across countries.

Insights, observations, and ruminations

1. Past research (ended at about 2018) of the Israeli case, revealed that within the OCS there was a tug-of-war related to DSIPs between supporters that saw an opportunity for making economic growth more inclusive – and therefore also with a higher growth ceiling – and those that thought that this would distract from the OCS's main objective: increasing R&D activities in the aggregate. We believe that this debate between proponents of investment in enterprises with the highest economic upside (assuming private funding is not forthcoming due to high risk) and those who seek social returns is universal. In Israel, given the low levels of public relative to private R&D funding this discussion takes place primarily among government officials. However, in places where the share of public funding in national expenditure on R&D is higher (for example, Korea), it is likely that the business sector would be more deeply involved.
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2. By the 2010s there was already a sense that the OCS's very success in helping build a thriving innovation eco-system made it superfluous. The standard Israeli startup no longer required state help given the availability of VC funding. The agency's shift to social objective could – perhaps – be explained as an attempt to make it relevant once again and ensure its survival. This relates to public policy theories about why organization termination rarely occurs (Geva-May 2004).
3. Aging populations could constitute an important factor for explaining the rise of inclusive growth strategies, DSIPs withstanding. Countries that experience a decline in the working age population, as is the case with Korea, are likely to establish programs aimed at making better use of sub-optimally employed human capital: women, minorities and the lower-skilled.
4. Private actors exert differential effects on the social inclusion dimension. In Israel, the high share of MNCs in the high-tech sector underpins socially inclusive policies in line with ESG (Environmental, Social and Governance) goals. This leads leading firms to endorse diversity promoting policies.

5. We should be wary about being taken in by "token" policies and programs. Governments might establish DSIPs so as to appear more progressive than they actually are. These programs, however, might be no more than an item in government PR and never really get off the ground. Low and declining budgets tend to be a sign of government disinterest.

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