

DETERMINANTS OF CROSS-BORDER INVESTMENT FLOWS IN ENERGY PROJECTS: QUALITATIVE VERSUS QUANTITATIVE FACTORS

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Overview

This paper investigates the determinants of cross-border investment flows in energy projects and explores investors' risk perceptions and return expectations for domestic versus foreign power generation projects. The analysis focuses on the investors registered in Switzerland.

The choice of the Swiss case for the analysis comes from several empirical observations. In 2011 companies from Switzerland planned to invest 6.8 billion CHF in renewable energy until 2020, and two thirds of these investments were planned abroad (Windisch, 2011). Many of these plans became reality. For example, the portfolio of one of the traditional Swiss utilities includes only 4% of the new renewable energy plants (small hydro, solar, wind) in Switzerland, and the rest – abroad (Alpiq 2015). A significant amount of these plants are located in Bulgaria (24%) and Italy (66%). Other Swiss utilities invest in Germany, Italy, Spain, and Romania (BKW, Repower, Axpo, EBL). Institutional investors, such as funds, insurances and banks, also invest abroad a lot (Susi Partners, Swiss Re, Credit Suisse, UBS).

International investment literature suggests that investors tend to do business in their home-countries rather than abroad (Ahearne, Grier, & Warnock, 2004; Huberman, 2001; Tesar & Werner, 1995). Such preference is assumed to be the result of investor-choices rather than institutional constraints (French & Poterba, 1991; Tesar & Werner, 1995). It can, for example, be caused by familiarity of the local investment opportunities (Huberman, 2001). Less research was done on the cases, when investors allocated more investments abroad than at home (Beugelsdijk & Frijns, 2010; Chan, Covrig, & Ng, 2005). This paper aims to fill this gap by investigating on a real sample of professional investors the factors affecting the choice of investment location.

Methods

First, I identify a set of past investments by Swiss investors in renewable energy projects domestically and abroad. I use the following data collection methods: database search (Bloomberg New Energy Finance), document analysis (media reports, company annual reports, investor presentations, proceedings of parliamentary hearings, etc.). Next, I identify the determinants of the decisions to invest in Switzerland and abroad through a combination of interviews and two focus group discussions at the St. Gallen Forum for Management of Renewable Energies.

Finally, I conduct an experiment with ten investment decision-makers asking them to choose between investment projects in Switzerland and Germany. In order to make their choice, decision-makers see the following information about the projects: technology, business model, feed-in tariff level, overall project cost, project size and annual production. Technology, cost and business model are the same for both cases, meaning investment of CHF 16.7 mln in already developed and constructed wind onshore power plant and generating profits from operating it and receiving compensation through feed-in tariff. While the level of feed-in tariff differs, as well the size and the annual production, the cash flows that could be projected using these parameters are the same. The decision makers see the data without pre-calculated cash flows and are encouraged to think aloud while making their investment decision.

Further, additional questions are asked about the factors affecting the location choice and risk premiums used for different locations, namely: 1) preferred technology; 2) preferred project stage for involvement; 3) preferred project size; 4) preferred country; 5) evaluation method used; 6) minimum hurdle rate on the project; 7) use of risk premiums for different locations; 8) range of risk premiums; 9) importance of individual calculation components for risk premium estimation; 10) perceived "safest" policy; 11) test question for knowledge of specifics of the feed-in tariff calculation in Germany and Switzerland.

Interviews, including 'Speak-our-loud' part, are recorded, transcribed, translated into English when necessary, and analysed through verbal protocol analysis technique. Verbal protocol analysis allows calculating density, or importance, of individual decision-making factors.

Results

About 50% of the interview partners, faced with the choice, opted for German project first, explaining their choice by (a) its bigger size, which might be associated with higher return beyond the 20-year period of guaranteed tariff; (b) its lower riskiness, as feed-in tariff felt for them more secure in Germany than in Switzerland; (c) business connections and previous experiences in the given region, allowing to save on annual costs and benefit from economies of scale. This group then suggested that they might still do the project in Switzerland for “political” or “qualitative” reasons, since they represent local companies and are supposed to participate in local energy transition. Another 50% of the interview partners attempted to do calculation right away and suggested that if the return is really the same, they would do the project in Switzerland for “political” reasons, pointing out to responsibility to participate in local energy transition. In the meantime, the same group mentioned that if project was still at the development stage, they would have to consider “qualitative” risk factors in Switzerland and would rather opt for Germany. By qualitative risk factors they meant long administrative procedures for acquiring construction permits and not the issue of social acceptance, which stands behind long processes. The interview partners felt that the levels of social acceptance are similar across Europe, but in other places than Switzerland either the processes take less time or the projects are bigger to allow a higher return rate to compensate for capital invested in the process. In the meantime, once faced with the question about feed-in tariff compensation in Switzerland, interview partners felt it was adequate and did not claim that they would expect it to compensate for the risks, associated with qualitative factors.

Thereby, interview partners used qualitative analysis when discussing investments in Switzerland and quantitative analysis when discussing investments abroad.

Conclusions

Interviews showed that for choosing a location for new investments, investment decision-makers focus either on qualitative or on quantitative risk/return analysis, depending on the location in question.

In this context, quantitative analysis means translating risk and return factors in the value of money and assigning specific risk premiums for locations and projects that are perceived as more risky. Quantitative analysis results in positioning of Switzerland as the least risky country, with risk premiums for other European countries ranging from 2% to 6%, depending on the policy (feed-in tariff – least risky, quota system – most risky) and earlier experiences (if energy policy stable – least risky, if changes or retrospective changes occurred – up to unacceptable level of risk).

Nevertheless, the low amount of investments in Switzerland compared to investments in Europe can be attributed to qualitative investment analysis by investors. In this context, qualitative analysis means risk/return analysis without its translation in monetary values and risk premiums. Considering qualitative factors, and not quantitative ones, often leads to the conclusion that the risk levels are unacceptable, because the monetary possibility of risk compensation is not envisioned.

These results suggest that qualitative factors define domestic energy investments and quantitative factors define foreign energy investments. Quantifying domestic risk and return factors may lead to increase of domestic risk premiums on the one hand, and, in case of appropriate risk compensation, to higher domestic investment volumes and speedier energy transition on the other hand.

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