**Part 4: Multi-criteria analysis (MCA)**

The multi-criteria analysis exists of different options. In this case option 0 is the status quo, which used as benchmark for other options. The benefits and costs of other options should be compared with option 0. In other words, the impact of the different measures in option 1 and 2 are marginal effects relative to doing nothing in option 0. You have to calculate the marginal cost and benefits of the first option. The costs and benefits of option 2 are already calculated in order to carry out a MCA.

* **Option 1: Polish cluster of measurements**

Option 1 exists of the Polish measurements that are currently active:

* + Stricter payment terms
  + Transparency of payment practices
  + Alternative Dispute Resolution System
  + Administrative sanctions
  + Compensation for recovery costs proportional to the size of the debt
  + Tax regulations

In order to calculate the impact of the Polish measurements, we take a time span of 10 years into account. The wages of the different stakeholder are mentioned in Table 2.

Due to stricter payment terms, 2 million SMEs should update their general contract terms. This process takes about 30 minutes for administrative employees.

The reporting obligation concerning the transparency of payment practices is only applicable for companies which have more than EUR 50 million revenue per years (18.000 firms in Poland). The reporting obligation is required quarterly. The first time, it takes about 2 hours of a corporate manager's time to get familiar with the reporting obligation. Drawing up the report takes 1 hour of a financial director's time and 3 hours of a corporate manager's time. To guarantee transparency of payment practices, governments databases and registries should be updated on regularly bases, which takes about 4 hours/week for a of a web design and developer professional's time.

The organisation of an alternative dispute resolution system has a start-up cost of EUR 100,000 for the government. These costs reflect the investment in computer software and a database in which the negotiators have to upload a report. It is expected that on average an alternative dispute resolution system is used by 7,500 SMEs per year. Instead of each firm hiring a lawyer, which spends on average 8 hours per case, there is only one negotiator per 2 firms. The negotiator spends on average 6 hours per dispute and is paid by the companies.

Administrative sanctions requires a system in which the public administration can help to take action against the debtor. On average, 1,500 enterprises are controlled each year, and the following actions are undertaken:

- 200 warnings;

- 100 injunctions;

- 150 notifications of the application of administrative sanctions.

An average check takes about 2 hours per firm (administrative employee) for the government as well as the firm. On average, the total annual number of administrative fines amounted to EUR 5 million.

The Late Payment Directive sets out a fixed sum of EUR 40 as compensation for recovery costs that the creditor is entitled to obtain from the debtor once interest for late payment has become payable. On average an administrative government employee spends 5 hours a week to make sure the system works correctly. Yearly, the system results in EUR 2 million in compensation. A system of tax regulations requires companies to fill in the correct forms, which have to be checked by the government. On average it takes about half an hour for an administrative employee to per application for the company as well as the government. On average 7,500 applications are filled in per year.

A system of tax regulation requires the government to invest in a software and database infrastructure of EUR 250,000. On average a fulltime administrative government employee (38 hours/week) controls and registers the request for tax reduction. On average 30,000 applications for tax reductions are requested per year, which takes approximately 30 minutes per application of an administrative employees. On the one hand, the tax reduction results in less government revenues, but on the other hand in less costs for the companies. In other words this is a shift between the government and the companies. The average tax reduction amounts to EUR 300 per application.

**Table 2: wages**

|  |  |
| --- | --- |
| **Business** | |
| *Financial director* | €100/hour |
| *Corporate manager* | €70/hour |
| *Administrative employees* | €40/hour |
| *Lawyer* | €90/hour |
| *Negotiator* | €60/hour |
| **Institution** | |
| *Web design and developer* | €45/hour |
| *Administrative employees* | *€40/hour* |

A survey of 1,000 Polish companies showed that these 6 Polish measurements increased trust with 30%-points compared to the status quo option. Due to the measurements, the liquidity positions of the companies increased and led to more investments. In total the policy measures will lead to an increase of 20,000 employers. On average, the payment delay decreased with 15 days due to the various policy measures. This also led to less costs in loans and credits for companies, for a total of EUR 50 million per year.

Besides lawyer cost savings due to the organisation of an alternative dispute resolution system, other measures also reduce late payments. On average, it saves each 5,000 SME 4 hours of lawyer costs each year.



* **Option 2: Extended Polish version**

Option 2 is an extension/modification of the current Polish policy concerning the Late Payment Directive. The impacts of this option are already calculated, which can be found in the multi-criteria analysis. Some examples of measurements are:

* + Apply stricter payment terms of option 1 only to SMEs with a certain turnovers (e.g. 500,000 euro). This would reduce the administrative burden with 75%, since it would be only applicable to 500,000 firms instead of 2 million.
  + We could also reduce the quarterly reporting obligation to a half-yearly obligations, which would also reduce the administrative burden significantly.
  + Free advice for companies on late payments organised by the Polish government.
  + An obligation to use an e-invoicing system would increase the operational costs.

4 steps in MCA

* Step 1: determine costs and benefits
* Step 2: standardization row maximum
* Step 3: multiply and sum up
* Step 4: determine preference rule

**Step 1: determine costs and benefits**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Option 0** | **Option 1** | **Option 2** |
| **Benefits** | | | |
| *Market* | | | |
| Trust (scale 1-10) | 0 |  | 5 |
| *Society* | | | |
| Employment (jobs) | 0 |  | 15,000 |
| *Business* | | | |
| Delay (days) | 0 |  | 20 |
| Operation and financial (€) | 0 |  | 75,000,000 |
| Enforcement (€) | 0 |  | 50,000,000 |
| **Costs** | | | |
| *Business* | | | |
| Administrative burden (€) | 0 |  | 150,000,000 |
| Operation and financial (€) | 0 |  | 100,000,000 |
| Enforcement (€) | 0 |  | 75,000,000 |
| *Institutions* | | | |
| Administrative burden (€) | 0 |  | 0 |
| Operation and financial (€) | 0 |  | 5,000,000 |
| Enforcement (€) | 0 |  | 10,000,000 |

**Step 2: standardization row maximum**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Option 0** | **Option 1** | **Option 2** |
| **Benefits** | | | |
| *Market* | | | |
| Trust (scale 1-10) | 0.00 |  |  |
| *Society* | | | |
| Employment (jobs) | 0.00 |  |  |
| *Business* | | | |
| Delay (days) | 0.00 |  |  |
| Operation and financial (€) | 0.00 |  |  |
| Enforcement (€) | 0.00 |  |  |
| **Costs** | | | |
| *Business* | | | |
| Administrative burden (€) | 0.00 |  |  |
| Operation and financial (€) | 0.00 |  |  |
| Enforcement (€) | 0.00 |  |  |
| *Institutions* | | | |
| Administrative burden (€) | 0.00 |  |  |
| Operation and financial (€) | 0.00 |  |  |
| Enforcement (€) | 0.00 |  |  |

**Step 3: multiply and sum up**

The next steps include the assignment of criteria weights. These weights, that show the relative importance of criteria in the multi-criteria problem under consideration, can be determined by techniques such as literature review of comparable studies in the past, interviewing experts in the field, the Analytical Hierarchy Process[[1]](#footnote-1), etc.

**Table 3: Weights for MCA**

|  |  |
| --- | --- |
| Trust (scale 1-10) | 10% |
| Employment (jobs) | 20% |
| *Business* |  |
| Delay (days) | 10% |
| Administrative burden (€) | 10% |
| Operation and financial (€) | 10% |
| Enforcement (€) | 10% |
| *Institutions* |  |
| Administrative burden (€) | 10% |
| Operation and financial (€) | 10% |
| Enforcement (€) | 10% |

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Option 0** | **Option 1** | **Option 2** |
| **Benefits** | | | |
| *Market* | | | |
| Trust (scale 1-10) | 0.00 |  |  |
| *Society* | | | |
| Employment (jobs) | 0.00 |  |  |
| *Business* | | | |
| Delay (days) | 0.00 |  |  |
| Operation and financial (€) | 0.00 |  |  |
| Enforcement (€) | 0.00 |  |  |
| **Costs** | | | |
| *Business* | | | |
| Administrative burden (€) | 0.00 |  |  |
| Operation and financial (€) | 0.00 |  |  |
| Enforcement (€) | 0.00 |  |  |
| *Institutions* | | | |
| Administrative burden (€) | 0.00 |  |  |
| Operation and financial (€) | 0.00 |  |  |
| Enforcement (€) | 0.00 |  |  |

**Step 4: determine preference rule**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Option 0** | **Option 1** | **Option 2** |
| **Benefits** | | | |
| *Market* | | | |
| Trust (scale 1-10) | 0.00 |  |  |
| *Society* | | | |
| Employment (jobs) | 0.00 |  |  |
| *Business* | | | |
| Delay (days) | 0.00 |  |  |
| Operation and financial (€) | 0.00 |  |  |
| Enforcement (€) | 0.00 |  |  |
| **Costs** | | | |
| *Business* | | | |
| Administrative burden (€) | 0.00 |  |  |
| Operation and financial (€) | 0.00 |  |  |
| Enforcement (€) | 0.00 |  |  |
| *Institutions* | | | |
| Administrative burden (€) | 0.00 |  |  |
| Operation and financial (€) | 0.00 |  |  |
| Enforcement (€) | 0.00 |  |  |
| **Total** | **0.00** |  |  |

1. The Analytic Hierarchy Process (AHP), introduced by Thomas Saaty (1980), is an effective tool for dealing with complex decision making, and may aid the decision maker to set priorities and make the best decision. By reducing complex decisions to a series of pairwise comparisons, and then synthesizing the results, the AHP helps to capture both subjective and objective aspects of a decision. In addition, the AHP incorporates a useful technique for checking the consistency of the decision maker’s evaluations, thus reducing the bias in the decision making process. (<http://www.dii.unisi.it/~mocenni/Note_AHP.pdf>) [↑](#footnote-ref-1)