Essays in Expected Utility
Agricultural Production under Uncertainty

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Σήφης Καυκαλάς

Περίληψη

Αυτή η διατριβή παρουσιάζει πώς η αβεβαιότητα επηρεάζει τη λήψη αποφάσεων, ειδικά σε όρους αποτελεσματικότητας και παραγωγικότητας. Εξετάζονται εναλλακτικές του κυρίαρχου υποδείγματος Αναμενόμενης Χρησιμότητας, με ιδιαίτερη εστίαση στην προσέγγιση των Υπο-συνθηκών Ενδεχομένων, που ακολουθείται για να παραχθούν αξιόπιστα μέτρα και μια τμηματική ανάλυση ενδεχομένων του δείκτη παραγωγικότητας Μάλμκουιστ. Από εμπειρικής πλευράς, η μη-παραμετρική μεθοδολογία της Ανάλυσης Περιβαλλόμενων Δεδομένων εφαρμόζεται σε πραγματικά στοιχεία αγροτικής παραγωγής, με εστίαση στη σημασία και σωστή εφαρμογή των συναρτήσεων αποστάσεως. Επιπλέον προτείνεται μία νέα προσέγγιση στον υπολογισμό των συναρτήσεων αποστάσεως, που επιλύει προβλήματα εφικτότητας και διαφορών μεταξύ των κατευθύνσεων εισροών και εκροών. Τέλος, προτείνεται ένα θεωρητικό υπόδειγμα λήψης αποφάσεων υπό αβεβαιότητα και συγκρίνεται με τα κύρια υποδείγματα Αναμενόμενης Χρησιμότητας και διακεκριμένα συμπεριφορικά υποδείγματα.

Sifis Kafkalas

Abstract

This thesis presents how uncertainty affects decision making, especially in terms of efficiency and productivity, and analyzes the primary sources of suboptimal behavior. Alternatives to the prominent Expected Utility framework are examined, with special focus on the State-Contingent approach, which is used to produce adequate measures and a state-decomposition of the Malmquist productivity index. On the empirical part, the non-parametric methodology of Data Envelopment Analysis (DEA) is applied on real data in agriculture, with special attention in the significance and proper use of distance functions. Moreover, a new approach in the calculation of distance functions is proposed, solving the issues of slacks and input-output differences. Finally, a theoretical model for decisions under uncertainty is proposed and compared against mainstream models of Expected Utility and leading behavioral models.

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Ευχαριστώ την οικογένειά μου, τον αδερφό μου **Παναγιώτη Καυκαλά**, που πιστεύει πάντα σε μένα, τη μητέρα μου **Γαρυφαλλιά Καλομοίρη** που είναι ο ήρωάς μου, του στοργικού ανιδιοτελούς μόχθου και ήθους, και αφιερώνω αυτή τη διατριβή στον πατέρα μου **Γεώργιο Καυκαλά**, που μου έδωσε την αγάπη για τον ελεύθερο συλλογισμό, με τις καλύτερές του αρχές και τις ελάχιστες δυνατές πεποιθήσεις.

Contents

Chapter 1

Introduction

Uncertainty is an important part of decision making, prominent in policy issues as well as in most aspects of everyday life. Various economic models have been developed to illustrate relevant subjects; the Expected Utility model and its generalizations have dominated as core analytical tools for decades, but lately they are challenged by some competent behavioral alternatives. In portfolio theory and finance, models of risk management have proved more popular, while in the economic analysis of crime there has not been much inprovement since the conceptualization of Becker. The lack of a unified theoretical background is evident, and in addition, there still exist fundamental unclarified issues at the heart of the uncertainty enigma, such as its diversification from the notion of risk. In order to address the subject with an applied prospect, this thesis focuses on production decisions, in a manner that does not harm the generality of the results over any decision setting. A primary goal of the analysis will be to examine the existent and provide improved productivity and efficiency measures, which are commonly used for the evaluation of production performance. In latter chapters, the results will be expanded in various areas of decision theory.

1.1 Doing our best

Productivity and efficiency are the most popular indicators of performance, because they can describe in a simple and intuitive manner the goals of any rational production agent, i.e. to produce the maximum attainable value given a constrained set of resources. Productivity is more or less defined as a ratio of output produced over inputs used, while efficiency describes how effectively inputs are used in the production of output. These approximate terms can easily be translated in a consumption decision setting, while they can also express the typical decision maker's problem of attaining the best result given a set of available choices. Thus, productivity can be extended to evaluate any type of decision performance, and inefficiency demonstrates in general terms a problem of suboptimal decision behavior; it is the problem of "doing our best". Interestingly enough, the problem of optimal choice for a rational decision maker harbors an inherent contradiction; if rationality dictates to make the best of our available choices and these choices are well defined, then why would ever a rational agent behave inefficiently? It must be either the setting or the rationality part that does not deliver.

Rationality, despite its widespread use in economics' literature, has been loosely and variably defined. Usually it appears as a synonym of "common reasoning" and it is used to describe differences among opinions, e.g.,"A girl decides to leave a promising career in business for a chance to become an actress, but her parents consider her decision to be totally irrational". In this example, the parents determine as irrational what contradicts their own personal beliefs, that could be derived from a different set of preferences than that of the girl who makes the decision. However, the difference of personal beliefs is utterly a matter of individuality rather than rationality, unless the parents' objection implies that this girl's decision will lead to worse results for her own welfare. But is there actually any reason for a decision maker to act against her own well-being? In the example above, the parents' interference could probably be justified, assuming that the girl has not taken into account all factors relevant to the problem, due to lack of information (i.e. knowledge or experience) or some sort of short-termed preference bias. Hence, as long as rationality holds to its definition, it is suggested that suboptimal behavior only emerge from rational agents when the decision setting is incomplete or imperfectly defined. Further discussion is available in latter chapters.

It would be most fitting to characterize with the term of "uncertainty" the imperfect decision setting, where the decision agent, either due to lack of information or the inability to accurately control his actions, is not able to guide his potential to the desired outcome. Then we could state that a rational agent may achieve less than his best under uncertainty, and on the other hand, efficiency is attainable. Undoubtedly, in theory this perfect framework of certainty is easy to assume and useful as a benchmark of comparison, in real life however it is almost impossible to perform under utopian conditions, with perfect information and total control of our decisions and their consequences. This thesis will analyze possible sources of uncertainty that produce measurements of suboptimal behavior and it will demonstrate that with adequate treatment of these factors, the unexplained deviations from optimal behavior, that were previously residually attributed to inefficiency, can be greatly reduced.

1.2 Aspects of uncertainty

Agents performing under uncertainty have limited information or control over the factors that affect the outcome of their decisions. Thus, deviations from optimal behavior can be caused by the inability of the agents to predict the exact conditions affecting their decisions, or by inaccurate use of the dispensable resources. But if we accept this lack of information or control to be exogenous, then these agents should be regarded as efficient, considering the context in which they perform. The key to distinguish the differences between inefficiency and infeasibility, is to discriminate the endogenous factors that are under the control of the decision agent, from the exogenous factors affecting his decisions and final outcome. In the decision analysis literature, the exogenous factors over which agents have no control have often been named as "states", after the expression "States of Nature". There are two ways these states can lead us to results of suboptimal behavior; through their effect on agents' behavior, or by misinterpretations of performance measurement.

From the agents' aspect, states can be unpredictable at the time of decision and they could emerge only after resources have been commited. These inputs - on which agents make decision relative to which state will emerge, but before that state has been ascertained - are called state-contingent inputs. For example, a person leaving his home decides to take or not an umbrella with him, but without being certain if the day will be rainy or not. Supposing he has a preference against getting wet, the choice between “carry umbrella” or “not carry umbrella” is contingent to the state “rain” or “no rain”. If that individual decides not to carry an umbrella and he encouters rainfall, he will appear to be inefficient because of not making the best available choice. However, he should be regarded as inefficient only if he certainly knew about the upcoming rainfall and deliberately did not take an umbrella and got wet, which then would be irrational. On the other if he decided to carry an umbrella and it did not rain, then he would be carrying with him the umbrella unecessarily, setting him inefficient again. So, his apparently suboptimal behavior is caused by lack of information over the exogenous conditions, rather than a personal motive.

Some approaches on uncertainty suggest that the knowledge of the probabilities over the uncertain outcomes should rationally dictate a bias in favor of more probable alternatives. However, as long as there exists an alternative of the slightest probability, a rational agent should not exclude it from his frame of judgement; the difference between “improbable” and “implausible” may prove to be crucial. Yet, if the individual takes into account all plausible alternatives and then consciously discards any of them from his expectations, then we move from the area of uncertainty to the field of risk. In the words of Frank Knight (1921), “a measurable uncertainty, or risk proper, as we shall use the term, is so far different from an unmeasurable one, that it is not in effect an uncertainty at all”. In the example above, if the individual decides to leave his umbrella at home despite some signs of clouds in the horizon, we could say that he “took the risk” of a possible upcoming rainfall. He would even so “take a risk” if he chose the most probable of his alternatives, since another one would still be likely to emerge. Thus, uncertainty describes only the imperfect setting that interferes with agents’ decisions, and it is hereby suggested that it should be furtherly distinguished from risk, if the loss of information is accountable or not by the decision maker.

On the other hand, uncertainty may not intervene directly on agents’ decisions, but rather through the observations that are made on their performance. Exogenous factors can create a bias against efficient agents, who appear to be inefficient comparing to more successful agents due to purely exogenous unfavorable conditions and not decision failure. We will call this effect “heterogeneity”, which is not a problem of decision makers’ uncertainty, but it can produce miscalculations of productivity and efficiency measurement if the observers are unable to assuredly distinguish exogenous from endogenous effects. In this case, agents are misguidingly considered as inefficient, because the states are known the time of agents’ decision, so they are fully informed about the consequences of their choices. The effect of heterogeneity may arise even when the exogenous effect is separable from endogenous variables, where agent’s decisions are totally independent from these exogenous states (state-indifferent decisions). In fact, if the exogenous effect is very strong, we could even observe ”unlucky” efficient agents to yield less than ”lucky” inefficient ones.

So, the heterogeneity effect occurs when the observer is uncertain about the exogenous effects on decision makers. Nevertheless, this problem may arise not only for differentiated effects among agents, but also for the decisions of a single agent over a series of states. If an agent is falsely considered by an observer of being able to make state-allocation of his inputs in an actually inflexible setting, then suboptimal performance due to inflexibility would be misinterpreted as inefficiency. For example suppose a traveler on a two days' trip, with available space in his luggage only for one set of clothes, and checking a weather forecast of a cold first day turning into a very warm second day. Since he is able to carry only one set of clothes he might choose a middle solution, which will keep him sufficiently warm in the cold day, yet at the same time as cool as possible for the second's day heat. In this case, an misinformed observer assuming that the choice of clothes can be different for each day, would consider the decisions of this traveler as suboptimal, whereas inefficient choices observed in one state are merely the cost of achieving better results in other states.

1.3 Synopsis of chapters

In the following Chapter 2 the reader is introduced to the State-Contingent approach of uncertainty, a modern theory of great analytic power on which most of this thesis has been developed. Moreover, the advantages of this approach are presented opposedly to alternative approaches and its formal analytic framework is set. Finally empirical results of the SC approach are produced on a real agriculture dataset, with the non-parametric methodology of Data Envelopment Analysis.

Chapter 3 proposes a new orientation for distance functions is proposed, named "hyper-feasible". The purpose of this alternative is to set a different direction for distance measures, than the commonly used beginning of the axes, so as to improve some aspects of measurement, while still retaining the useful properties of a radial measure.

Chapter 4 presents a proposed model for decisions under uncertainty, against the advantages and shortcomings of the widely cited model of Cumulative Prospect Theory (CPT). Moreover, an independent endogenous growth model on tax-evasion follows, under the analysis of Kafkalas, Kalaitzidakis and Tzouvelekas (2014), confirming the findings of the proposed approach.

Chapter 2

The State-Contingent (SC) framework

The depiction of uncertainty through the aforementioned notion of states is so fundamental and intuitive, that it has been used -at least descriptively- in every approach on uncertainty, but also in other fields of study like game theory. Nonetheless, a coherent framework incorporating and developing this logic did not appear until Chambers and Quiggin (2000) set up the State-Contingent (SC) framework. The SC methodology provides a consistent benchmark for analysis of all problems in the economics of uncertainty; consumer choice, theory of the firm and principal-agent relationships and it will be followed throughout this thesis.

The State-Contingent approach can be applied in any setting of technology. This chapter presents the basic SC setting and how it can be associated with non-parametric analysis. The unrestrictive SC characteristics can be matched perfectly with the use of distance functions, with the latter being widely applied in productivity and efficiency measurement. The Malmquist productivity index is such a measure and here we can see how it can be derived from the SC framework and how it can be applied empirically, using the non-parametric approach of Data Envelopment Analysis (DEA).

2.1 From "states" to "State-Contingent"

The term "states" is derived from the phrase "States of Nature" which initially appeared -although with a slightly different meaning- in moral and political philosophy[1]. The first to use it in economic terms and with its accurate meaning of exogeneity were Arrow (1953) and Debreu (1952)[2], who used it in General Equilibrium theory to describe random variables representing conditions that affect the production process. With the represen-

[1]Thomas Aquinas ("Disputed Questions on Truth", Question 19, Article 1, Answer 13) mentions: "The infusion of the gifts of grace does not reach those who are in hell, but these souls are not deprived of the things which belong to the state of nature." In these terms "state of nature" has a rarther positive interpretation of harmonic symbiosis with the surrounding environment. Other notable mentions using the term on the question of what is natural or in contrast with personal freedom are Thomas Hobbes (1651), John Locke (1680), David Hume (1739) and Montesquieu (1748).

[2]See also Arrow and Debreu (1954)

tation of uncertainty by a set of possible states of nature, Arrow and Debreu showed how production under uncertainty can be represented as a multi-output technology, formally identical to a non-stochastic technology, thus leaving unaffected by uncertainty the necessary and sufficient conditions for the existence and optimality of equilibrium. It was clear then how a volatile or unpredicted exogenous environment can explain why a decision agent could possible not perform to its expected optimum.

Chambers and Quiggin (2000) developed this idea into a thorough analytic framework that keeps the core notion of Arrow and Debreu, but is generalized and consistent with the existing literature on preferences under uncertainty. Hence, it is justifiable to say that it outruns -and also encompasses as special cases- influential approaches like the Expected-Utility theory. Generally in competing approaches, decisions are modeled as choices between random variables indexed by input levels or between probability distributions over a finite set of possible outcomes, that misguidingly sometimes have be called "states" as well. We can refer to these alternative approaches as the "parametrized distribution" formulation and the "outcome-state" formulation.

2.2 Advantages of the SC approach

As mentioned previously, in order to produce proper measures of efficiency and detect the real sources of productivity, we have to distinguish the effects of exogenous factors that alter optimal agents' behavior due to uncertainty. However, the outcome of agents' decisions is always combined with the realization of one of the alternative states, which was only a possibility before outcome was produced. Thus, we see the result of an individual carrying or not an umbrella on a rainy day, but what we don't see from one event is the procedure that this individual followed to make this decision. How sure was he about the upcoming rainfall? How easy was it for him to aquire an umbrella? Did he put much effort to the decision making procedure? Maybe that much of an effort that would surpass the gains from a succesfull decision?

Hence, it is the process that takes place before the emergence of exogenous conditions where the identification of the problem lies. The SC approach focuses on and achieves exactly this part of identification, providing the tools to describe the agents' encounter with uncertainty and the possible strategies that arise from the combination of available actions and possible conditions. In the SC methodology, the state space is a set of variables completely out from decision makers' reach, yet in direct connection with every piece of the action set and with no further behavioral or distributional assumptions. The parametrized distribution formulation disregards the underlying state space, describing given choices with random variables over which agents make their decisions. There is also part of literature, like that on principal-agents problems, that uses the terminology of "states", however in a confounding way that does not capture the role of a distinct state space. The outcome-state representation determines the probability distribution of the states by a continuous mapping from input space to the outcome-state realization. Another advantage of the SC methodology is that it does not cancel but envelops these rival approaches as special cases.

An example can be given on the most notable stochastic production function model, that

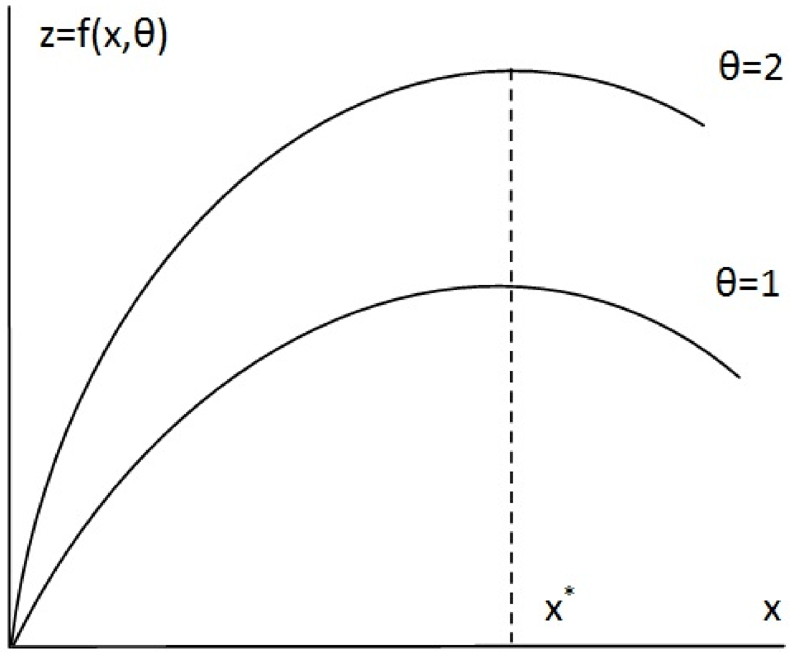

Figure 2.1: A classic example of a stochastic production function

has been the foundation of most studies of production under uncertainty. Let $\mathbf{x} \in \mathbb{R}^N_+$ denote a vector of non-stochastic inputs and $\theta \in \{1, 2\}$ the set of states, which could be a random exogenous input to the production procedure, whose realization is not known to the producer at the time of decision. The stochastic production function presumes that the random output $z \in \mathbb{R}_+$ is derived by the relationship:

$$z = f(\mathbf{x}, \theta) \tag{2.1}$$

If for example $\theta = 1$ is the realization of an unfavorable state and $\theta = 2$ is the realization of a favorable one, then $f(\mathbf{x}, 1) < f(\mathbf{x}, 2)$. However, the relation of the stochastic input with the non-stochastic agents' input choice, which is characterized by the technology "f" is not able to change through states in this framework, thus producing a picture like the one of figure 2.1.

Here, what the resolution of uncertainty does is to merely transpose the production function vertically, thus increasing or decreasing the productivity of non-stochastic input choices. But then, the optimal decisions of the producer do not change relatively to the change of conditions. This is a very restrictive case, as we could meet a form like figure 2.2 or figure 2.3. In figure 2.2 the increase in the productivity of x between states is bigger in higher levels of the non-stochastic input, thus shifting the optimal decision of state 2 to the right. The same applies for figure 2.3 where moreover, state 2 does not have to be favorable to state 1 for every level of x.

Approaches as the parametrized distribution formulation and the outcome-state formulation can only manage cases like the figure 2.1. The SC approach enables to work on all types of uncertainty mentioned above, with the other methodologies encluded as a special case, where producers' decisions are not contingent to the state space, thus the uncertainty effect is disembodied.

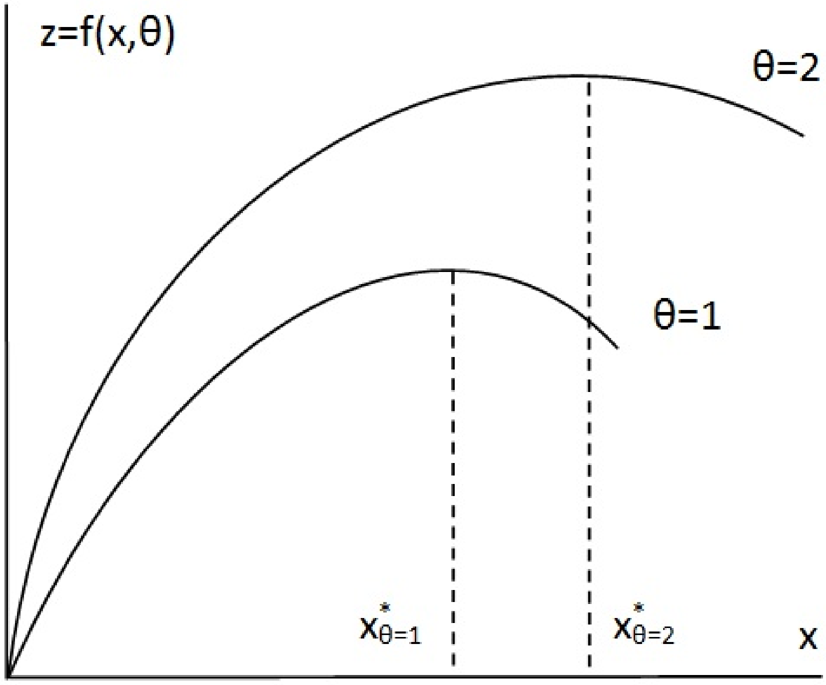

Figure 2.2: Change of optimal decision, but one state globally preferred

2.3 The form of SC production technology

For the State-Contingent formulation of a technology we first need to define the state space. The set of states Ω is a finite set of S states that are mutually exclusive, from which "Nature", in the form of a neutral agent, picks one state, and once the state is known uncertainty is removed.

$$\Omega = \{1, 2, ..., S\} \tag{2.2}$$

The set of states theoretically includes all possible states of our environment, but since this can be infinite we use Ω to index only the exogenous factors that may have an effect in our decisions. The agents make their production choices over a set of N non-stochastic inputs $\mathbf{x} \in \mathbb{R}_+^N$, prior to the resolution of uncertainty. For a multi-output technology in an environment of certainty we would have a set of M outputs $\mathbf{y} \in \mathbb{R}_+^M$, but since we face a stochastic environment the set of outputs that the agent anticipates is the set of $M \times S$ stochastic state-contingent outputs $\mathbf{z} \in \mathbb{R}_+^{M \times S}$.

Then, the SC production technology can be modeled by either an input or an output correspondence. The output correspondence is the set of stochastic outputs that can be produced by the set of non-stochastic inputs:

$$Z(\mathbf{x}) = \{\mathbf{z} \in \mathbb{R}_+^{M \times S} : \mathbf{x} \in \mathbb{R}_+^N \text{ can produce } \mathbf{z}\} \tag{2.3}$$

The equivalent representation of the input correspondence would be:

$$X(\mathbf{z}) = \{\mathbf{x} \in \mathbb{R}_+^N : \mathbf{x} \text{ can produce } \mathbf{z} \in \mathbb{R}_+^{M \times S}\} \tag{2.4}$$

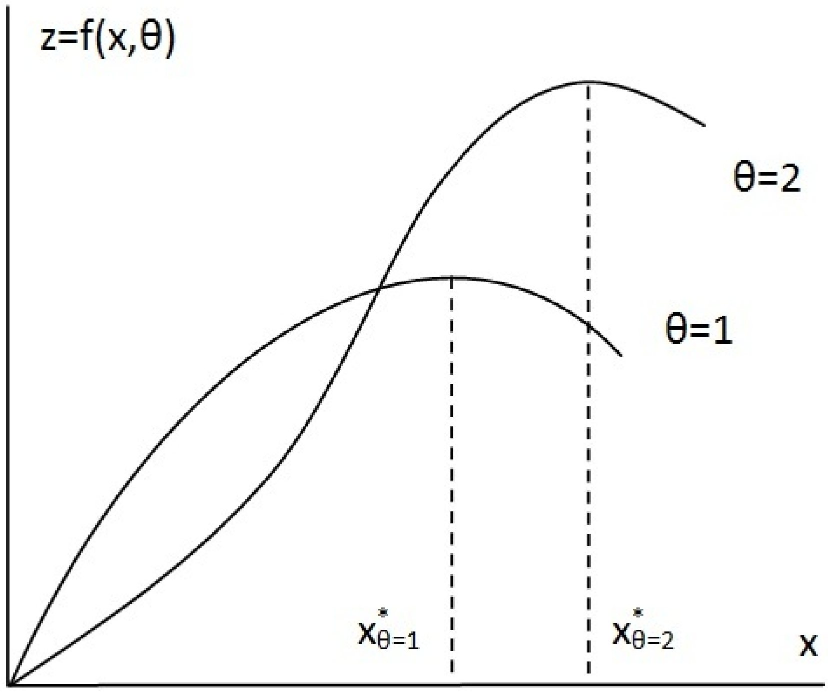

Figure 2.3: Change of technology form, not one globally preferred

Here we can assume various properties to adjust our technology representation to the needs of our research. If we limit ourselves only to the most essential and less restrictive elements, we can have the most generic representation of any form of technology that we can get from the literature on uncertainty. Besides, in order to be more specific, we can apply more restrictive properties and focus to any special case of interest. Here follow some of the basic and least restrictive properties that can help to formulate our technology:

- No fixed costs and no free lunch

  $\mathbf{0}_{M\times S} \in Z(\mathbf{x})$ for all $\mathbf{x} \in \mathbb{R}^N_+,\ \mathbf{z} \notin Z(\mathbf{0}_N)$ for $\mathbf{z} \neq \mathbf{0}_{M\times S}$

- Free disposability of outputs

  $\mathbf{z}' \leq \mathbf{z} \in Z(\mathbf{x}) \Rightarrow \mathbf{z}' \in Z(\mathbf{x})$

- Weak disposability of outputs

  $\mathbf{z} \in Z(\mathbf{x}) \Rightarrow \lambda\mathbf{z} \in Z(\mathbf{x})$ for $0 < \lambda < 1$

- Free disposability of inputs

  $\mathbf{x}' \geq \mathbf{x} \Rightarrow Z(\mathbf{x}) \subseteq Z(\mathbf{x}')$

- Weak disposability of inputs

  $Z(\mathbf{x}) \subseteq Z(\lambda\mathbf{x})$ for $\lambda > 1$

These assumptions are so elemental in the setup of any form of technology, while at the same time restrictive in the least, therefore they produce a good benchmark for analysis and comparison of any production framework.

2.4 Malmquist index and decompositions of Uncertainty and Heterogeneity

For the empricial part of this thesis, a Malmquist index will be produced with the use of input and output distance functions. Shephard (1953) introduced the input distance function in the context of production analysis, while at the same time Malmquist (1953) introduced the input distance function in the context of consumption analysis. However, Malmquist went a step further than Shephard, by developing a standard of living (or consumption quantity) index as the ratio of a pair of input distance functions. In the context of production analysis, Malmquists standard of living index becomes an input quantity index.

With the help of distance functions, the technology where an input-output bundle (x,y) belongs can be described by the distance of this bundle from the frontier of this technology. This can be achieved by either the expansion of output or the reduction of input, to the supremum (maximum level) that still alows for the bundle to belong to the same technology.

Thus, a technology can be defined using an input distance function:

$$I(\mathbf{z},\mathbf{x}) = sup\left\{\theta > 0 : \frac{\mathbf{x}}{\theta} \in X(\mathbf{z})\right\} \tag{2.5}$$

or an output distance function:

$$O(\mathbf{z},\mathbf{x}) = sup\left\{\theta > 0 : \theta \cdot \mathbf{z} \in Z(\mathbf{x})\right\} \tag{2.6}$$

In most part of the calculation of a Malmquist index, input or output distance functions can be used interchangeably[3], depending on research purpose and setting. In such a case, where we wish not to predetermine the type of distance used, instead of $I(\mathbf{z},\mathbf{x})$ or $O(\mathbf{z},\mathbf{x})$ we shall use the indication $D(\mathbf{z},\mathbf{x})$, which represents the distance of a bundle $(\mathbf{z},\mathbf{x})$ from its technology frontier, but not its input or output orientation. Following the state-contingent approach we can include factors of imperfect information, that transform a bundle of certainty into a state-contingent bundle of uncertainty. Then, $D(\mathbf{z},\mathbf{x};\mathbf{s})$ can be used for the distance function of a bundle $\mathbf{z}$ under a vector of exogenous conditions $\mathbf{s}$, while $D(\mathbf{z},\mathbf{x},\boldsymbol{\epsilon})$ can be used to include factors of uncertainty $\boldsymbol{\epsilon}$, on which the decision maker has imperfect information or control.

For the representation of the Malmquist index we shall use distance functions of the type $D(\mathbf{z},\mathbf{x};t)$, that express the distance of the bundle $\mathbf{z},\mathbf{x}$ from its technology frontier at the time period t. For the calculation of the general form of Malmquist index, measuring productivity change between two bundles $(\mathbf{z}^0,\mathbf{x}^0;t^0)$ and $(\mathbf{z}^1,\mathbf{x}^1;t^1)$ we need the following

[3]Ideally, the interchangeable use of input or output distance functions should produce the same results, but in practice this usually does not happen, due to distance function application issues. Further discussion on the proper selection and use of distance functions in following chapters.

four distance functions:

$$\begin{aligned} &1)\ D(\mathbf{z}^0, \mathbf{x}^0; t^0) \\ &2)\ D(\mathbf{z}^1, \mathbf{x}^1; t^1) \\ &3)\ D(\mathbf{z}^0, \mathbf{x}^0; t^1) \\ &4)\ D(\mathbf{z}^1, \mathbf{x}^1; t^0) \end{aligned} \tag{2.7}$$

The bundles $(\mathbf{z}^0, \mathbf{x}^0)$ and $(\mathbf{z}^1, \mathbf{x}^1)$ express two different producer's decisions, but they may also be based in two different decision settings; the producer might have changed his decision from the first to the second bundle due to effects of exogenous nature. We add the time parameter to check if these decisions have been affected by changes related to a time-evolving setting. $D(\mathbf{z}^0, \mathbf{x}^0; t^0)$ and $D(\mathbf{z}^1, \mathbf{x}^1; t^1)$ express the distance of the bundles from their own time period frontier, while $D(\mathbf{z}^0, \mathbf{x}^0; t^1)$ and $D(\mathbf{z}^1, \mathbf{x}^1; t^0)$ express cross distances. Then the Malmquist productivity index is calculated as:

$$P^{t^0,t^1}(\mathbf{z}^0, \mathbf{x}^0; \mathbf{z}^1, \mathbf{x}^1) = \left[\frac{D(\mathbf{z}^1, \mathbf{x}^1; t^1)}{D(\mathbf{z}^0, \mathbf{x}^0; t^1)} \frac{D(\mathbf{z}^1, \mathbf{x}^1; t^0)}{D(\mathbf{z}^0, \mathbf{x}^0; t^0)}\right]^{\frac{1}{2}} \tag{2.8}$$

which can be decomposed into efficiency and heterogeneity components:

$$P^{t^0,t^1}(\mathbf{z}^0, \mathbf{x}^0; \mathbf{z}^1, \mathbf{x}^1) = E^{t^0,t^1}(\mathbf{z}^0, \mathbf{x}^0; \mathbf{z}^1, \mathbf{x}^1) \times H^{t^0,t^1}(\mathbf{z}^0, \mathbf{x}^0; \mathbf{z}^1, \mathbf{x}^1) \tag{2.9}$$

$$E^{t^0,t^1}(\mathbf{z}^0, \mathbf{x}^0; \mathbf{z}^1, \mathbf{x}^1) = \frac{D(\mathbf{z}^1, \mathbf{x}^1; t^1))}{D(\mathbf{z}^0, \mathbf{x}^0; t^0))} \tag{2.10}$$

$$H^{t^0,t^1}(\mathbf{z}^0, \mathbf{x}^0; \mathbf{z}^1, \mathbf{x}^1) = \left[\frac{D(\mathbf{z}^0, \mathbf{x}^0; t^0)}{D(\mathbf{z}^0, \mathbf{x}^0; t^1)} \frac{D(\mathbf{z}^1, \mathbf{x}^1; t^0)}{D(\mathbf{z}^1, \mathbf{x}^1; t^1)}\right]^{\frac{1}{2}} \tag{2.11}$$

Following the same rationale, we can introduce an additional factor "s" in our analysis, expressing a "state" change between two settings. In an example of agricultural production, this change could be a difference in environmental factors, like rainfall or drought, or any exogenous effect out of the producers' control, like pest infestation. To produce a Malmquist index that includes a state effect, we shall use distances of the type D($\mathbf{z}$,$\mathbf{x}$;t,s). We will now need the following eight distance functions:

$$\begin{aligned} &1)\ D(\mathbf{z}^0, \mathbf{x}^0; t^0, s^0) \\ &2)\ D(\mathbf{z}^0, \mathbf{x}^0; t^1, s^0) \\ &3)\ D(\mathbf{z}^1, \mathbf{x}^1; t^0, s^0) \\ &4)\ D(\mathbf{z}^1, \mathbf{x}^1; t^1, s^0) \\ &5)\ D(\mathbf{z}^0, \mathbf{x}^0; t^0, s^1) \\ &6)\ D(\mathbf{z}^0, \mathbf{x}^0; t^1, s^1) \\ &7)\ D(\mathbf{z}^1, \mathbf{x}^1; t^0, s^1) \\ &8)\ D(\mathbf{z}^1, \mathbf{x}^1; t^1, s^1) \end{aligned} \tag{2.12}$$

With the first four distances, we can rewrite overall Productivity change between two input-output bundles of our dataset $(\mathbf{z}^0, \mathbf{x}^0)$ and $(\mathbf{z}^1, \mathbf{x}^1)$ and decompose it into Efficiency and Heterogeneity just as before, with sole difference the introduction of s^0. Up to this point, although we introduce the state-change indicator, we notice that all of our measures have the same value s^0, thus providing no additional information and only changing the notation:

$$P^{s^0,s^1,t^0,t^1}(\mathbf{z}^0, \mathbf{x}^0; \mathbf{z}^1, \mathbf{x}^1) = E^{s^0,s^1,t^0,t^1}(\mathbf{z}^0, \mathbf{x}^0; \mathbf{z}^1, \mathbf{x}^1) \times H^{s^0,s^1,t^0,t^1}(\mathbf{z}^0, \mathbf{x}^0; \mathbf{z}^1, \mathbf{x}^1) \tag{2.13}$$

$$P^{s^0,s^1,t^0,t^1}(\mathbf{z}^0, \mathbf{x}^0; \mathbf{z}^1, \mathbf{x}^1) = \left[\frac{D(\mathbf{z}^1, \mathbf{x}^1; t^1, s^0)}{D(\mathbf{z}^0, \mathbf{x}^0; t^1, s^0)} \frac{D(\mathbf{z}^1, \mathbf{x}^1; t^0, s^0)}{D(\mathbf{z}^0, \mathbf{x}^0; t^0, s^0)}\right]^{\frac{1}{2}} \tag{2.14}$$

$$E^{s^0,s^1,t^0,t^1}(\mathbf{z}^0, \mathbf{x}^0; \mathbf{z}^1, \mathbf{x}^1) = \frac{D(\mathbf{z}^1, \mathbf{x}^1; t^1, s^0)}{D(\mathbf{z}^0, \mathbf{x}^0; t^0, s^0)} \tag{2.15}$$

$$H^{s^0,s^1,t^0,t^1}(\mathbf{z}^0, \mathbf{x}^0; \mathbf{z}^1, \mathbf{x}^1) = \left[\frac{D(\mathbf{z}^0, \mathbf{x}^0; t^0, s^0)}{D(\mathbf{z}^0, \mathbf{x}^0; t^1, s^0)} \frac{D(\mathbf{z}^1, \mathbf{x}^1; t^0, s^0)}{D(\mathbf{z}^1, \mathbf{x}^1; t^1, s^0)}\right]^{\frac{1}{2}} \tag{2.16}$$

Please be aware that s^0 does not translate into "state of time period 0", but rather a "concurrent state", i.e. the state that characterizes the input-output bundle, as opposed to a "state of comparison", which could be e.g. the state of last year's or the average bundle. With the last four distances we introduce an alternative state of comparison s^1, with which we can decompose the Heterogeneity component into Technical-change and State-change (Ω). The ratios exhibiting different time factor t^i, indicate the change caused by a time-evolving setting, thus characterized as Technical-change, while ratios with difference on factor s^i indicate the State-change:

$$H^{s^0,s^1,t^0,t^1}(\mathbf{z}^0, \mathbf{x}^0; \mathbf{z}^1, \mathbf{x}^1) = T^{s^0,s^1,t^0,t^1}(\mathbf{z}^0, \mathbf{x}^0; \mathbf{z}^1, \mathbf{x}^1) \times \Omega^{s^0,s^1,t^0,t^1}(\mathbf{z}^0, \mathbf{x}^0; \mathbf{z}^1, \mathbf{x}^1) \tag{2.17}$$

$$H^{s^0,s^1,t^0,t^1}(\mathbf{z}^0, \mathbf{x}^0; \mathbf{z}^1, \mathbf{x}^1) = \left[\frac{D(\mathbf{z}^0, \mathbf{x}^0; t^0, s^0)}{D(\mathbf{z}^0, \mathbf{x}^0; t^1, s^0)} \frac{D(\mathbf{z}^1, \mathbf{x}^1; t^0, s^0)}{D(\mathbf{z}^1, \mathbf{x}^1; t^1, s^0)}\right]^{\frac{1}{2}} \tag{2.18}$$

$$\begin{aligned} &T^{s^0,s^1,t^0,t^1}(\mathbf{z}^0, \mathbf{x}^0; \mathbf{z}^1, \mathbf{x}^1) = \\ &= \left[\frac{D(\mathbf{z}^0, \mathbf{x}^0; t^0, s^0)}{D(\mathbf{z}^0, \mathbf{x}^0; t^1, s^0)} \frac{D(\mathbf{z}^0, \mathbf{x}^0; t^0, s^1)}{D(\mathbf{z}^0, \mathbf{x}^0; t^1, s^1)}\right]^{\frac{1}{4}} \left[\frac{D(\mathbf{z}^1, \mathbf{x}^1; t^0, s^0)}{D(\mathbf{z}^1, \mathbf{x}^1; t^1, s^0)} \frac{D(\mathbf{z}^1, \mathbf{x}^1; t^0, s^1)}{D(\mathbf{z}^1, \mathbf{x}^1; t^1, s^1)}\right]^{\frac{1}{4}} \end{aligned} \tag{2.19}$$

$$\begin{aligned} &\Omega^{s^0,s^1,t^0,t^1}(\mathbf{z}^0, \mathbf{x}^0; \mathbf{z}^1, \mathbf{x}^1) = \\ &= \left[\frac{D(\mathbf{z}^0, \mathbf{x}^0; t^0, s^0)}{D(\mathbf{z}^0, \mathbf{x}^0; t^0, s^1)} \frac{D(\mathbf{z}^0, \mathbf{x}^0; t^1, s^1)}{D(\mathbf{z}^0, \mathbf{x}^0; t^1, s^0)}\right]^{\frac{1}{4}} \left[\frac{D(\mathbf{z}^1, \mathbf{x}^1; t^0, s^0)}{D(\mathbf{z}^1, \mathbf{x}^1; t^0, s^1)} \frac{D(\mathbf{z}^1, \mathbf{x}^1; t^1, s^1)}{D(\mathbf{z}^1, \mathbf{x}^1; t^1, s^0)}\right]^{\frac{1}{4}} \end{aligned} \tag{2.20}$$

We can clearly see that the new measures follow the pattern of the initial Malmquist analysis, like a "stage-two decomposition". The two parts arising in each component express the two ways through which the decomposition can take place, i.e. through the first or the second input-output bundle.

Hence, we saw how the introduction of a state variable provides the information needed, to identify the effects of exogenous factors on the decision setting, and how the State-Contingent framework can achieve this with the least of technology restrictions and also by exploiting the potential of tools like the distance functions. Moreover, what we can achieve with the SC formulation, is the distinction between uncertainty and heterogeneity. The way that the state factor is introduced above expresses an exogenous effect, which renders the decision maker facing a worse state factor less productive, but not necessarily less efficient. A less productive agent due to unfavorable conditions could still be efficient, if he makes the best utilization of his resources regarding these conditions, while an agent facing favorable conditions could be more productive but still less efficient, if he does not reach the optimum of his advantageous setting.

In the expressions above, the state-factor is introduced as an exogenous setting, given at the time of decision making. Thus, the productivity change attributed to state changes should not be characterized as inefficiency, but rather as heterogeneity. This implies that such a change in productivity is not derived from misinformation of the decision maker, but from factors that the analyst should include in his framework, in order to deduce proper measures. On the other hand, imperfect information on behalf of the decision agent would appear as a change in the decision section; if instead of an exogenous factor s^i we include an endogenous factor ϵ^i, we produce measures of state-inefficiency. This factor is expressed as an input on which the producer is inadequately informed, and instead of $D(\mathbf{z}^0, \mathbf{x}^0; t^0, s^0)$ we have $D(\mathbf{z}^0, \mathbf{x}^0, \epsilon^0; t^0)$. Then, we shall use the following distance functions:

$$\begin{array}{l} 1)\ D(\mathbf{z}^0, \mathbf{x}^0, \epsilon^0; t^0) \\ 2)\ D(\mathbf{z}^0, \mathbf{x}^0, \epsilon^0; t^1) \\ 3)\ D(\mathbf{z}^1, \mathbf{x}^1, \epsilon^0; t^0) \\ 4)\ D(\mathbf{z}^1, \mathbf{x}^1, \epsilon^0; t^1) \\ 5)\ D(\mathbf{z}^0, \mathbf{x}^0, \epsilon^1; t^0) \\ 6)\ D(\mathbf{z}^0, \mathbf{x}^0, \epsilon^1; t^1) \\ 7)\ D(\mathbf{z}^1, \mathbf{x}^1, \epsilon^1; t^0) \\ 8)\ D(\mathbf{z}^1, \mathbf{x}^1, \epsilon^1; t^1) \end{array} \tag{2.21}$$

and the initial Malmquist decomposition will be expressed as follows:

$$P^{s^0,s^1,t^0,t^1}(\mathbf{z}^0,\mathbf{x}^0;\mathbf{z}^1,\mathbf{x}^1) = E^{s^0,s^1,t^0,t^1}(\mathbf{z}^0,\mathbf{x}^0;\mathbf{z}^1,\mathbf{x}^1) \times H^{s^0,s^1,t^0,t^1}(\mathbf{z}^0,\mathbf{x}^0;\mathbf{z}^1,\mathbf{x}^1) \tag{2.22}$$

$$P^{s^0,s^1,t^0,t^1}(\mathbf{z}^0,\mathbf{x}^0;\mathbf{z}^1,\mathbf{x}^1) = \left[\frac{D(\mathbf{z}^1,\mathbf{x}^1,\epsilon^0;t^1)}{D(\mathbf{z}^0,\mathbf{x}^0,\epsilon^0;t^1)}\,\frac{D(\mathbf{z}^1,\mathbf{x}^1,\epsilon^0;t^0)}{D(\mathbf{z}^0,\mathbf{x}^0,\epsilon^0;t^0)}\right]^{\frac{1}{2}} \tag{2.23}$$

$$E^{s^0,s^1,t^0,t^1}(\mathbf{z}^0,\mathbf{x}^0;\mathbf{z}^1,\mathbf{x}^1) = \frac{D(\mathbf{z}^1,\mathbf{x}^1,\epsilon^0;t^1)}{D(\mathbf{z}^0,\mathbf{x}^0,\epsilon^0;t^0)} \tag{2.24}$$

$$H^{s^0,s^1,t^0,t^1}(\mathbf{z}^0,\mathbf{x}^0;\mathbf{z}^1,\mathbf{x}^1) = \left[\frac{D(\mathbf{z}^0,\mathbf{x}^0,\epsilon^0;t^0)}{D(\mathbf{z}^0,\mathbf{x}^0,\epsilon^0;t^1)}\,\frac{D(\mathbf{z}^1,\mathbf{x}^1,\epsilon^0;t^0)}{D(\mathbf{z}^1,\mathbf{x}^1,\epsilon^0;t^1)}\right]^{\frac{1}{2}} \tag{2.25}$$

Then, the state-decomposition will produce an uncetrainty component (U) instead of a heterogeneity component:

$$H^{s^0,s^1,t^0,t^1}(\mathbf{z}^0,\mathbf{x}^0;\mathbf{z}^1,\mathbf{x}^1) = T^{s^0,s^1,t^0,t^1}(\mathbf{z}^0,\mathbf{x}^0;\mathbf{z}^1,\mathbf{x}^1) \times U^{s^0,s^1,t^0,t^1}(\mathbf{z}^0,\mathbf{x}^0;\mathbf{z}^1,\mathbf{x}^1) \tag{2.26}$$

$$H^{s^0,s^1,t^0,t^1}(\mathbf{z}^0,\mathbf{x}^0;\mathbf{z}^1,\mathbf{x}^1) = \left[\frac{D(\mathbf{z}^0,\mathbf{x}^0,\epsilon^0;t^0)}{D(\mathbf{z}^0,\mathbf{x}^0,\epsilon^0;t^1)}\,\frac{D(\mathbf{z}^1,\mathbf{x}^1,\epsilon^0;t^0)}{D(\mathbf{z}^1,\mathbf{x}^1,\epsilon^0;t^1)}\right]^{\frac{1}{2}} \tag{2.27}$$

$$\begin{aligned} &T^{s^0,s^1,t^0,t^1}(\mathbf{z}^0,\mathbf{x}^0;\mathbf{z}^1,\mathbf{x}^1) = \\ &= \left[\frac{D(\mathbf{z}^0,\mathbf{x}^0,\epsilon^0;t^1)}{D(\mathbf{z}^0,\mathbf{x}^0,\epsilon^0;t^0)}\,\frac{D(\mathbf{z}^0,\mathbf{x}^0,\epsilon^1;t^0)}{D(\mathbf{z}^0,\mathbf{x}^0,\epsilon^1;t^1)}\right]^{\frac{1}{4}} \left[\frac{D(\mathbf{z}^1,\mathbf{x}^1,\epsilon^0;t^1)}{D(\mathbf{z}^1,\mathbf{x}^1,\epsilon^0;t^0)}\,\frac{D(\mathbf{z}^1,\mathbf{x}^1,\epsilon^1;t^0)}{D(\mathbf{z}^1,\mathbf{x}^1,\epsilon^1;t^1)}\right]^{\frac{1}{4}} \end{aligned} \tag{2.28}$$

$$\begin{aligned} &U^{s^0,s^1,t^0,t^1}(\mathbf{z}^0,\mathbf{x}^0;\mathbf{z}^1,\mathbf{x}^1) = \\ &= \left[\frac{D(\mathbf{z}^0,\mathbf{x}^0,\epsilon^0;t^0)}{D(\mathbf{z}^0,\mathbf{x}^0,\epsilon^1;t^0)}\,\frac{D(\mathbf{z}^0,\mathbf{x}^0,\epsilon^1;t^1)}{D(\mathbf{z}^0,\mathbf{x}^0,\epsilon^0;t^1)}\right]^{\frac{1}{4}} \left[\frac{D(\mathbf{z}^1,\mathbf{x}^1,\epsilon^0;t^0)}{D(\mathbf{z}^1,\mathbf{x}^1,\epsilon^1;t^0)}\,\frac{D(\mathbf{z}^1,\mathbf{x}^1,\epsilon^1;t^1)}{D(\mathbf{z}^1,\mathbf{x}^1,\epsilon^0;t^1)}\right]^{\frac{1}{4}} \end{aligned} \tag{2.29}$$

2.5 SC formulated in Data Envelopment Analysis (DEA)

With the help of DEA we can calculate input or output distance functions directly from a dataset. For K number of firms, N number of inputs and M number of outputs, the input distance of the firm i from the technology frontier is computed as follows:

$$I(\mathbf{z}_i, \mathbf{x}_i) = min\left\{\theta : \theta x_{ni} \geq \sum_{k=1}^{K} \lambda_k x_{nk} \ , \ z_{mi} \leq \sum_{k=1}^{K} \lambda_k z_{mk} \ , \right. \\ \left. \lambda_k \geq 0 \ , \ k = 1, \dots, K \ , \ n = 1, \dots, N \ , \ m = 1, \dots, M \right\} \tag{2.30}$$

where $\mathbf{z}_i = [z_{1i}, \dots, z_{Ni}]$ and $\mathbf{x}_i = [x_{1i}, \dots, z_{Mi}]$. Then the output distance function will be:

$$O(\mathbf{z}_i, \mathbf{x}_i) = max\left\{\theta : \theta z_{mi} \leq \sum_{k=1}^{K} \lambda_k z_{mk} \ , \ x_{ni} \geq \sum_{k=1}^{K} \lambda_k x_{nk} \ , \right. \\ \left. \lambda_k \geq 0 \ , \ i = 1, \dots, K \ , \ n = 1, \dots, N \ , \ m = 1, \dots, M \right\} \tag{2.31}$$

The form of the technology above is called "Constant Returns to Scale", because it produces a straight-line technology frontier passing through $(\mathbf{0},\mathbf{0})$ (hence its property) and over the bundle of maximum productivity among the bundles of the dataset. If we add the restriction $\sum_{k=1}^{K} \lambda_k = 1$, then the frontier is shaped around the linear connections of our datapoints, thus enveloping the dataset in a convex set. This type of technology is called "Variable Returns to Scale":

$$I^{VRS}_{(\mathbf{z}_i, \mathbf{x}_i)} = min\left\{\theta : \theta x_{ni} \geq \sum_{k=1}^{K} \lambda_k x_{nk} \ , \ z_{mi} \leq \sum_{k=1}^{K} \lambda_k z_{mk} \ , \sum_{k=1}^{K} \lambda_k = 1 \ , \right. \\ \left. \lambda_k \geq 0 \ , \ k = 1, \dots, K \ , \ n = 1, \dots, N \ , \ m = 1, \dots, M \right\} \tag{2.32}$$

$$O^{VRS}_{(\mathbf{z}_i, \mathbf{x}_i)} = max\left\{\theta : \theta z_{mi} \leq \sum_{k=1}^{K} \lambda_k z_{mk} \ , \ x_{ni} \geq \sum_{k=1}^{K} \lambda_k x_{nk} \ , \ \sum_{k=1}^{K} \lambda_k = 1 \ , \right. \\ \left. \lambda_k \geq 0 \ , \ k = 1, \dots, K \ , \ n = 1, \dots, N \ , \ m = 1, \dots, M \right\} \tag{2.33}$$

When needed, we can use the general notation $D(\mathbf{z}_i, \mathbf{x}_i)$ without specifying the input-output orientation and the returns-to-scale. Hereafter, when the general notation of distance function is used, the distance function orientation and the returns-to-scale need not to be defined a priori. Then, we can choose one of the following specifications:

$$D^{I-CRS}_{(\mathbf{z}_i,\mathbf{x}_i)} = min\left\{\theta : \theta x_{ni} \geq \sum_{k=1}^{K} \lambda_k x_{nk} \ , \ z_{mi} \leq \sum_{k=1}^{K} \lambda_k z_{mk} \ , \right.$$
$$\left. \lambda_k \geq 0 \ , \ k = 1, \dots, K \ , \ n = 1, \dots, N \ , \ m = 1, \dots, M \right\} \tag{2.34}$$

$$D^{I-VRS}_{(\mathbf{z}_i,\mathbf{x}_i)} = min\left\{\theta : \theta x_{ni} \geq \sum_{k=1}^{K} \lambda_k x_{nk} \ , \ z_{mi} \leq \sum_{k=1}^{K} \lambda_k z_{mk} \ , \sum_{k=1}^{K} \lambda_k = 1 \ , \right.$$
$$\left. \lambda_k \geq 0 \ , \ k = 1, \dots, K \ , \ n = 1, \dots, N \ , \ m = 1, \dots, M \right\} \tag{2.35}$$

$$D^{O-CRS}_{(\mathbf{z}_i,\mathbf{x}_i)} = max\left\{\theta : \theta z_{mi} \leq \sum_{k=1}^{K} \lambda_k z_{mk} \ , \ x_{ni} \geq \sum_{k=1}^{K} \lambda_k x_{nk} \ , \right.$$
$$\left. \lambda_k \geq 0 \ , \ k = 1, \dots, K \ , \ n = 1, \dots, N \ , \ m = 1, \dots, M \right\} \tag{2.36}$$

$$D^{O-VRS}_{(\mathbf{z}_i,\mathbf{x}_i)} = max\left\{\theta : \theta z_{mi} \leq \sum_{k=1}^{K} \lambda_k y_{mk} \ , \ x_{ni} \geq \sum_{k=1}^{K} \lambda_k x_{nk} \ , \ \sum_{k=1}^{K} \lambda_k = 1 \ , \right.$$
$$\left. \lambda_k \geq 0 \ , \ k = 1, \dots, K \ , \ n = 1, \dots, N \ , \ m = 1, \dots, M \right\} \tag{2.37}$$

where N=number of inputs, M=number of outputs and K=number of decision agents.

Introducing a time factor t produces the form of distance function used in the original Malmquist formula (in the form of (2.34) specification):

$$D^{I-CRS}_{(\mathbf{z}^t_i,\mathbf{x}^t_i;t)} = min\left\{\theta : \theta x^t_{ni} \geq \sum_{k=1}^{K} \lambda^t_k x^t_{nk} \ , \ z^t_{mi} \leq \sum_{k=1}^{K} \lambda^t_k z^t_{mk} \ , \ \lambda^t_k \geq 0 \ , \right.$$
$$\left. k = 1, \dots, K \ , \ n = 1, \dots, N \ , \ m = 1, \dots, M \ , \ t = 1, \dots, T \right\} \tag{2.38}$$

The introduction of t produces time specific measures, i.e. distance functions which are specific for each time period. Please be aware that the time indicator on (z^t_i, x^t_i) can differ from that on (z^t_k, x^t_k); the first is the input-output bundle for which the measures are produced, while the second is the set of elements on which it is projected. Thus, we can have a projection of a bundle at a specific time period, on a set of past or future time period, which will produce time evolving measure.

Essentially, time is an exogenous factor, as of which any exogenous state factor should be treated. Thus, introducing a general state factor “s” will add an indicator on our observed data, as follows:

$$D^{I-CRS}_{(\mathbf{z}_i^t,\mathbf{x}_i^t;t,s)} = min\left\{\theta : \theta x^t_{ni} \geq \sum_{k=1}^{K} \lambda_k^{ts} x_{nk}^{ts} \ , \ z^t_{mi} \leq \sum_{k=1}^{K} \lambda_k^{ts} z_{mk}^{ts} \ , \ \lambda_k^{ts} \geq 0 \ , \right. \\ \left. k=1,\dots,K \ , \ n=1,\dots,N \ , \ m=1,\dots,M \ , \ t=1,\dots,T \ , \ s=1,\dots,S \right\} \tag{2.39}$$

$$D^{I-VRS}_{(\mathbf{z}_i^t,\mathbf{x}_i^t;t,s)} = min\left\{\theta : \theta x^t_{ni} \geq \sum_{k=1}^{K} \lambda_k^{ts} x_{nk}^{ts} \ , \ z^t_{mi} \leq \sum_{k=1}^{K} \lambda_k^{ts} z_{mk}^{ts} \ , \ \sum_{k=1}^{K} \lambda_k^{ts} = 1 \ , \right. \\ \left. \lambda_k^{ts} \geq 0 \ , \ k=1,\dots,K \ , \ n=1,\dots,N \ , \ m=1,\dots,M \ , \ t=1,\dots,T \ , \ s=1,\dots,S \right\} \tag{2.40}$$

$$D^{O-CRS}_{(\mathbf{z}_i^t,\mathbf{x}_i^t;t,s)} = max\left\{\theta : \theta z^t_{mi} \leq \sum_{k=1}^{K} \lambda_k^{ts} z_{mk}^{ts} \ , \ x^t_{ni} \geq \sum_{k=1}^{K} \lambda_k^{ts} x_{nk}^{ts} \ , \ \lambda_k^{ts} \geq 0 \ , \right. \\ \left. k=1,\dots,K \ , \ n=1,\dots,N \ , \ m=1,\dots,M \ , \ t=1,\dots,T \ , \ s=1,\dots,S \right\} \tag{2.41}$$

$$D^{O-VRS}_{(\mathbf{z}_i^t,\mathbf{x}_i^t;t,s)} = max\left\{\theta : \theta z^t_{mi} \leq \sum_{k=1}^{K} \lambda_k^{ts} z_{mk}^{ts} \ , \ x^t_{ni} \geq \sum_{k=1}^{K} \lambda_k^{ts} x_{nk}^{ts} \ , \ \sum_{k=1}^{K} \lambda_k^{ts} = 1 \ , \right. \\ \left. \lambda_k^{ts} \geq 0 \ , \ k=1,\dots,K \ , \ n=1,\dots,N \ , \ m=1,\dots,M \ , \ t=1,\dots,T \ , \ s=1,\dots,S \right\} \tag{2.42}$$

The state indicator signifies a different context that characterizes observations with different state value. Including more state indicators will categorize our dataset in more detailed subgroups. In the marginal case where each observation expresses a unique set of conditions, then each element will define a unique technology frontier, in which it will be rendered efficient. This will occur because linear programming methods are comparative, so in lack of comparison elements, inefficiency measurement is impossible. The researcher can use the SC framework to depict technology and produce adequate efficiency and productivity measures, merely by categorizing the available data in groups of homogeneity, without imposing any unnecessary assumptions.

On the other hand, the purpose of an Uncertainty factor "ϵ" is to show the effects on performance from the part of the decision maker, due to misinformation or loose control. This can be presented in the form of an input s^ϵ, on which the agent has imperfect information or control at the time of decision making. So, instead of comparing the agent-i's realized decision s_i over the set of other agents' decisions $\{s_1, \ ..., \ s_K\}$, we can an alternative choice s_i^ϵ in its place, which could be:

- the average realized decision $s_i^\epsilon = \frac{1}{K}\sum\limits_{k=1}^{K} s_k$, which would imply that more information over competitors would enhance performance,

- last year's realized decision $s_i^{t\epsilon} = s_i^{t-1}$, in case this would be a targeted decision but missed by bad control,

- any target decision $s_i^{\epsilon} = s_i^{*}$ suggested by theoretical support, or

- the finally realized choice acompanied by an error term $s_i^{\epsilon} = s_i \pm \epsilon$

This approach can formulate any supported alternative decision, so when compared with the realized one, it will measure the discrepancy caused by uncertainty. For k=1,...,K agents, n=1,...,N inputs and m=1,...,M outputs we have:

$$D^{I-CRS}_{(\mathbf{z}_i^t,\mathbf{x}_i^t,\epsilon;t)} = min\left\{\theta : \theta x^t_{ni} \geq \sum_{k=1}^{K} \lambda_k^t x_{nk}^t \ ,\ z^t_{mi} \leq \sum_{k=1}^{K} \lambda_k^t z_{mk}^t \ ,\ s_i^{t\epsilon} \geq \sum_{k=1}^{K} \lambda_k^t s_k^t \ , \right.$$
$$\left. \lambda_k^t \geq 0 \ ,\ t=1,\ldots,T \ ,\ s^{t\epsilon} \in \{s^{t1},\ ...,\ s^{tE}\} \right\} \tag{2.43}$$

$$D^{I-VRS}_{(\mathbf{z}_i^t,\mathbf{x}_i^t,\epsilon;t)} = min\left\{\theta : \theta x^t_{ni} \geq \sum_{k=1}^{K} \lambda_k^t x_{nk}^t \ ,\ z^t_{mi} \leq \sum_{k=1}^{K} \lambda_k^t z_{mk}^t \ ,\ s_i^{t\epsilon} \geq \sum_{k=1}^{K} \lambda_k^t s_k^t \ , \right.$$
$$\left. \sum_{k=1}^{K} \lambda_k^t = 1 \ ,\ \lambda_k^t \geq 0 \ ,\ t=1,\ldots,T \ ,\ s^{t\epsilon} \in \{s^{t1},\ ...,\ s^{tE}\} \right\} \tag{2.44}$$

$$D^{O-CRS}_{(\mathbf{z}_i^t,\mathbf{x}_i^t,\epsilon;t)} = max\left\{\theta : \theta z^t_{mi} \leq \sum_{k=1}^{K} \lambda_k^t z_{mk}^t \ ,\ x^t_{ni} \geq \sum_{k=1}^{K} \lambda_k^t x_{nk}^t \ ,\ s_i^{t\epsilon} \geq \sum_{k=1}^{K} \lambda_k^t s_k^t \ , \right.$$
$$\left. \lambda_k^t \geq 0 \ ,\ t=1,\ldots,T \ ,\ s^{t\epsilon} \in \{s^{t1},\ ...,\ s^{tE}\} \right\} \tag{2.45}$$

$$D^{O-VRS}_{(\mathbf{z}_i^t,\mathbf{x}_i^t,\epsilon;t)} = max\left\{\theta : \theta z^t_{mi} \leq \sum_{k=1}^{K} \lambda_k^t z_{mk}^t \ ,\ x^t_{ni} \geq \sum_{k=1}^{K} \lambda_k^t x_{nk}^t \ ,\ s_i^{t\epsilon} \geq \sum_{k=1}^{K} \lambda_k^t s_k^t \ , \right.$$
$$\left. \sum_{k=1}^{K} \lambda_k^t = 1 \ ,\ \lambda_k^t \geq 0 \ ,\ t=1,\ldots,T \ ,\ s^{t\epsilon} \in \{s^{t1},\ ...,\ s^{tE}\} \right\} \tag{2.46}$$

Hence, in the form of a stochastic input, the element of Uncertainty can be examined from the aspect of agents' input decisions. However, we can also use s^{ϵ} as an output, which will still produce a divergence of performance, that can be attributed to different expectations that the agent has over the output:

$$D^{I-CRS}_{(\mathbf{z}^t_i,\mathbf{x}^t_i,\epsilon;t)} = min\left\{\theta : \theta x^t_{ni} \geq \sum_{k=1}^{K} \lambda^t_k x^t_{nk} \; , \; z^t_{mi} \leq \sum_{k=1}^{K} \lambda^t_k z^t_{mk} \; , \; s^{t\epsilon}_i \leq \sum_{k=1}^{K} \lambda^t_k s^t_k \; , \right. \\ \left. \lambda^t_k \geq 0 \; , \; t = 1, \ldots, T \; , \; s^{t\epsilon} \in \{s^{t1}, \; ..., \; s^{tE}\}\right\} \tag{2.47}$$

$$D^{I-VRS}_{(\mathbf{z}^t_i,\mathbf{x}^t_i,\epsilon;t)} = min\left\{\theta : \theta x^t_{ni} \geq \sum_{k=1}^{K} \lambda^t_k x^t_{nk} \; , \; z^t_{mi} \leq \sum_{k=1}^{K} \lambda^t_k z^t_{mk} \; , \; s^{t\epsilon}_i \leq \sum_{k=1}^{K} \lambda^t_k s^t_k \; , \right. \\ \left. \sum_{k=1}^{K} \lambda^t_k = 1 \; , \; \lambda^t_k \geq 0 \; , \; t = 1, \ldots, T \; , \; s^{t\epsilon} \in \{s^{t1}, \; ..., \; s^{tE}\}\right\} \tag{2.48}$$

$$D^{O-CRS}_{(\mathbf{z}^t_i,\mathbf{x}^t_i,\epsilon;t)} = max\left\{\theta : \theta z^t_{mi} \leq \sum_{k=1}^{K} \lambda^t_k z^t_{mk} \; , \; x^t_{ni} \geq \sum_{k=1}^{K} \lambda^t_k x^t_{nk} \; , \; s^{t\epsilon}_i \leq \sum_{k=1}^{K} \lambda^t_k s^t_k \; , \right. \\ \left. \lambda^t_k \geq 0 \; , \; t = 1, \ldots, T \; , \; s^{t\epsilon} \in \{s^{t1}, \; ..., \; s^{tE}\}\right\} \tag{2.49}$$

$$D^{O-VRS}_{(\mathbf{z}^t_i,\mathbf{x}^t_i,\epsilon;t)} = max\left\{\theta : \theta z^t_{mi} \leq \sum_{k=1}^{K} \lambda^t_k z^t_{mk} \; , \; x^t_{ni} \geq \sum_{k=1}^{K} \lambda^t_k x^t_{nk} \; , \; s^{t\epsilon}_i \leq \sum_{k=1}^{K} \lambda^t_k s^t_k \; , \right. \\ \left. \sum_{k=1}^{K} \lambda^t_k = 1 \; , \; \lambda^t_k \geq 0 \; , \; t = 1, \ldots, T \; , \; s^{t\epsilon} \in \{s^{t1}, \; ..., \; s^{tE}\}\right\} \tag{2.50}$$

The introduction of s^{ϵ}, either as an output or as an input, may be justified by the influx of additional information that was previously unavailable, or by reconsideration of the stochastic nature of an existing output or input. In the first case, the total number of inputs N and outputs M remains unchanged, and the inclusion of the new factor shows what would happen from the expansion of the information set. In the latter case, we detect the miscalculation of an agent who might have erroneously considered a stochastic factor as non-stochastic, and the input/output set will decrease to N-1/M-1 by the transposition of the non-stochastic factor into the stochastic field.

2.6 Applied distance expressions and matrix formulation

Let's consider a dataset of $(\mathbf{z}^t, \mathbf{x}^t)$ non-stochastic output-input bundles, where $\mathbf{x} \in \mathbb{R}^+_N$, $\mathbf{z} \in \mathbb{R}^+_M$, spreading over two different time periods $t \in \{0, 1\}$. The distance functions in (2.7) that the original Malmqusit formula consists of, will be expressed in

DEA form as:

$$\begin{aligned}
&1)\ D(\mathbf{z}^0,\mathbf{x}^0;t^0) = min\left\{\theta : \theta x^0_{ni} \geq \sum_{k=1}^{K}\lambda^0_k x^0_{nk}\ ,\ z^0_{mi} \leq \sum_{k=1}^{K}\lambda^0_k z^0_{mk}\ ,\ \lambda^0_k \geq 0\ ,\right\}\\
&2)\ D(\mathbf{z}^1,\mathbf{x}^1;t^1) = min\left\{\theta : \theta x^1_{ni} \geq \sum_{k=1}^{K}\lambda^1_k x^1_{nk}\ ,\ z^1_{mi} \leq \sum_{k=1}^{K}\lambda^1_k z^1_{mk}\ ,\ \lambda^1_k \geq 0\ ,\right\}\\
&3)\ D(\mathbf{z}^0,\mathbf{x}^0;t^1) = min\left\{\theta : \theta x^0_{ni} \geq \sum_{k=1}^{K}\lambda^1_k x^1_{nk}\ ,\ z^0_{mi} \leq \sum_{k=1}^{K}\lambda^1_k z^1_{mk}\ ,\ \lambda^1_k \geq 0\ ,\right\} \qquad (2.51)\\
&4)\ D(\mathbf{z}^1,\mathbf{x}^1;t^0) = min\left\{\theta : \theta x^1_{ni} \geq \sum_{k=1}^{K}\lambda^0_k x^0_{nk}\ ,\ z^1_{mi} \leq \sum_{k=1}^{K}\lambda^0_k z^0_{mk}\ ,\ \lambda^0_k \geq 0\ ,\right\}\\
&k = 1,\ldots,K\ agents,\ n = 1,\ldots,N\ inputs,\ m = 1,\ldots,M\ outputs,\ t \in \{0,1\}\\
&Distance\ functions:\ input\ oriented,\ CRS\ technology
\end{aligned}$$

These expressions can easily be adjusted for output orientation and VRS technology. Introducing an $s \in \{s^0, s^1\}$ factor of Heterogeneity, the respective distance functions of (2.12) will be expressed in DEA form as:

$$\begin{aligned}
&1)\ D(\mathbf{z}^0,\mathbf{x}^0;t^0,s^0) = min\left\{\theta : \theta x^0_{ni} \geq \sum_{k=1}^{K}\lambda^{00}_k x^{00}_{nk}\ ,\ z^0_{mi} \leq \sum_{k=1}^{K}\lambda^{00}_k z^{00}_{mk}\ ,\ \lambda^{00}_k \geq 0\ ,\right\}\\
&2)\ D(\mathbf{z}^0,\mathbf{x}^0;t^1,s^0) = min\left\{\theta : \theta x^0_{ni} \geq \sum_{k=1}^{K}\lambda^{10}_k x^{10}_{nk}\ ,\ z^0_{mi} \leq \sum_{k=1}^{K}\lambda^{10}_k z^{10}_{mk}\ ,\ \lambda^{10}_k \geq 0\ ,\right\}\\
&\ldots\\
&5)\ D(\mathbf{z}^0,\mathbf{x}^0;t^0,s^1) = min\left\{\theta : \theta x^0_{ni} \geq \sum_{k=1}^{K}\lambda^{01}_k x^{01}_{nk}\ ,\ z^0_{mi} \leq \sum_{k=1}^{K}\lambda^{01}_k z^{01}_{mk}\ ,\ \lambda^{01}_k \geq 0\ ,\right\} \qquad (2.52)\\
&\ldots\\
&8)\ D(\mathbf{z}^1,\mathbf{x}^1;t^1,s^1) = min\left\{\theta : \theta x^1_{ni} \geq \sum_{k=1}^{K}\lambda^{11}_k x^{11}_{nk}\ ,\ z^1_{mi} \leq \sum_{k=1}^{K}\lambda^{11}_k z^{11}_{mk}\ ,\ \lambda^{11}_k \geq 0\ ,\right\}\\
&k = 1,\ldots,K\ ,\ n = 1,\ldots,N\ ,\ m = 1,\ldots,M\ ,\ s \in \{s^1,s^2\}\ ,\ t \in \{0,1\}\\
&Distance\ functions:\ input\ oriented,\ CRS\ technology
\end{aligned}$$

Finally, the respective distance functions of (2.21), including an $s^\epsilon \in \{s^1, s^2\}$ factor of

Uncertainty (in the form of an uncertain input), will be expressed in DEA form as:

$$
\begin{aligned}
&1)D(\mathbf{z}^0,\mathbf{x}^0,\epsilon^0;t^0) = min\left\{\theta : \theta x^0_{ni} \geq \sum_{k=1}^{K}\lambda^0_k x^0_{nk},\ z^0_{mi} \leq \sum_{k=1}^{K}\lambda^0_k z^0_{mk},\ s^0_i \geq \sum_{k=1}^{K}\lambda^0_k s^0_k\right\}\\
&2)D(\mathbf{z}^0,\mathbf{x}^0,\epsilon^0;t^1) = min\left\{\theta : \theta x^0_{ni} \geq \sum_{k=1}^{K}\lambda^1_k x^1_{nk},\ z^0_{mi} \leq \sum_{k=1}^{K}\lambda^1_k z^1_{mk},\ s^0_i \geq \sum_{k=1}^{K}\lambda^1_k s^1_k\right\}\\
&...\\
&5)D(\mathbf{z}^0,\mathbf{x}^0,\epsilon^1;t^0) = min\left\{\theta : \theta x^0_{ni} \geq \sum_{k=1}^{K}\lambda^0_k x^0_{nk},\ z^0_{mi} \leq \sum_{k=1}^{K}\lambda^0_k z^0_{mk},\ s^1_i \geq \sum_{k=1}^{K}\lambda^0_k s^0_k\right\}\\
&...\\
&8)D(\mathbf{z}^1,\mathbf{x}^1,\epsilon^1;t^1) = min\left\{\theta : \theta x^1_{ni} \geq \sum_{k=1}^{K}\lambda^1_k x^1_{nk},\ z^1_{mi} \leq \sum_{k=1}^{K}\lambda^1_k z^1_{mk},\ s^1_i \geq \sum_{k=1}^{K}\lambda^1_k s^1_k\right\}\\
&\lambda^0_k, \lambda^1_k \geq 0\ ,\ k = 1, ..., K\ ,\ n = 1, ..., N\ ,\ m = 1, ..., M\ ,\ s^{\epsilon} \in \{s^1, s^2\}\ ,\ t \in \{0, 1\}\\
&Distance\ functions:\ \textit{input oriented, CRS technology}
\end{aligned}
\tag{2.53}
$$

In following chapters, non-parametric estimation of the measures above are produced, using matrice representation in linear programming. The general form of distance functions (input orientation, CRS technology) is writen in matrice form as:

$$
\begin{aligned}
&\text{(input orientation, CRS technology, two inputs, single output)}\\
&D(z_i, x_i) = min\left\{\theta : \theta x_{ni} \geq \sum_{k=1}^{K}\lambda_k x_{nk}\ ,\ z_{mi} \leq \sum_{k=1}^{K}\lambda_k z_{mk}\ ,\ \lambda_k \geq 0\right\} =\\
&= \min_{\boldsymbol{\lambda}} f\boldsymbol{\lambda} \quad \text{so that} \quad A\boldsymbol{\lambda} \leq b\ ,
\end{aligned}
\tag{2.54}
$$

$$
where\ \ f = \begin{bmatrix} 1 & 0_1 & ... & 0_K \end{bmatrix}
$$

$$
and\ A\boldsymbol{\lambda} \leq b \Leftrightarrow
$$

$$
\begin{bmatrix} -x_{1i} & x_{11} & ... & x_{1K} \\ -x_{2i} & x_{21} & ... & x_{2K} \\ 0 & -z_1 & ... & -z_K \end{bmatrix}
\begin{bmatrix} \theta \\ \lambda_1 \\ \vdots \\ \lambda_K \end{bmatrix}
\leq
\begin{bmatrix} 0 \\ 0 \\ -z_i \end{bmatrix}
$$

Respectively, the output orientation under VRS technology will be ($max\theta$ but $f =$

−1):

(output orientation, VRS technology, two inputs, single output)

$$D(z_i, x_i) = max\left\{\theta : \theta z_{mi} \leq \sum_{k=1}^{K} \lambda_k z_{mk}\ ,\ x_{ni} \geq \sum_{k=1}^{K} \lambda_k x_{nk}\ ,\ \lambda_k \geq 0\right\} =$$

$$= \min_{\boldsymbol{\lambda}} f\boldsymbol{\lambda} \quad \text{so that} \quad A\boldsymbol{\lambda} \leq b\ ,\ Aeq \cdot \boldsymbol{\lambda} = beq\ , \tag{2.55}$$

$$where\ \ f = \begin{bmatrix} -1 & 0_1 & ... & 0_K \end{bmatrix}$$

$$and\ A\boldsymbol{\lambda} \leq b \Leftrightarrow$$

$$\begin{bmatrix} 0 & x_{11} & ... & x_{1K} \\ 0 & x_{21} & ... & x_{2K} \\ z_i & -z_1 & ... & -z_K \end{bmatrix} \begin{bmatrix} \theta \\ \lambda_1 \\ \vdots \\ \lambda_K \end{bmatrix} \leq \begin{bmatrix} x_{1i} \\ x_{2i} \\ 0 \end{bmatrix}$$

$$and\ Aeq \cdot \boldsymbol{\lambda} = beq \Leftrightarrow$$

$$\begin{bmatrix} 0 & 1 & ... & 1 \end{bmatrix} \begin{bmatrix} \theta \\ \lambda_1 \\ \vdots \\ \lambda_K \end{bmatrix} = \begin{bmatrix} 1 \end{bmatrix}$$

We see that the transition from CRS to VRS technology is achieved by the addition of a summation of lamdas equal to 1. So, we can focus on CRS representations, and expand in VRS when needed in applications. Introducing a time factor t, we can produce the distance functions needed to build the original Malmquist index and its decomposition, whose CRS representation would be:

($t \in \{0, 1\}$, input orientation, CRS technology, two inputs, single output)

$$D(\mathbf{z}^0, \mathbf{x}^0; t = 0) = min\left\{\theta : \theta x_{ni}^0 \geq \sum_{k=1}^{K} \lambda_k^0 x_{nk}^0\ ,\ z_{mi}^0 \leq \sum_{k=1}^{K} \lambda_k^0 z_{mk}^0\ ,\ \lambda_k^0 \geq 0\right\} =$$

$$= \min_{\boldsymbol{\lambda}} f\boldsymbol{\lambda} \quad \text{so that} \quad A\boldsymbol{\lambda} \leq b\ , \tag{2.56}$$

$$where\ \ f = \begin{bmatrix} 1 & 0_1^0 & ... & 0_K^0 \end{bmatrix}$$

$$and\ A\boldsymbol{\lambda} \leq b \Leftrightarrow$$

$$\begin{bmatrix} -x_{1i}^0 & x_{11}^0 & ... & x_{1K}^0 \\ -x_{2i}^0 & x_{21}^0 & ... & x_{2K}^0 \\ 0 & -z_1^0 & ... & -z_K^0 \end{bmatrix} \begin{bmatrix} \theta \\ \lambda_1^0 \\ \vdots \\ \lambda_K^0 \end{bmatrix} \leq \begin{bmatrix} 0 \\ 0 \\ -z_i^0 \end{bmatrix}$$

while the same output-input bundle $(\mathbf{z}^0, \mathbf{x}^0)$ projected on the next time period's t=1 frontier, will give:

($t \in \{0, 1\}$, input orientation, CRS technology, two inputs, single output)

$$D(\mathbf{z}^0, \mathbf{x}^0; t = 1) = min \left\{ \theta : \theta x_{ni}^0 \geq \sum_{k=1}^{K} \lambda_k^1 x_{nk}^1 \ , \ z_{mi}^0 \leq \sum_{k=1}^{K} \lambda_k^1 z_{mk}^1 \ , \ \lambda_k^1 \geq 0 \right\} =$$

$$= \min_{\boldsymbol{\lambda}} f\boldsymbol{\lambda} \quad \text{so that} \quad A\boldsymbol{\lambda} \leq b \ , \tag{2.57}$$

where $f = \begin{bmatrix} 1 & 0_1^1 & ... & 0_K^1 \end{bmatrix}$

and $A\boldsymbol{\lambda} \leq b \Leftrightarrow$

$$\begin{bmatrix} -x_{1i}^0 & x_{11}^1 & ... & x_{1K}^1 \\ -x_{2i}^0 & x_{21}^1 & ... & x_{2K}^1 \\ 0 & -z_1^1 & ... & -z_K^1 \end{bmatrix} \begin{bmatrix} \theta \\ \lambda_1^1 \\ \vdots \\ \lambda_K^1 \end{bmatrix} \leq \begin{bmatrix} 0 \\ 0 \\ -z_i^0 \end{bmatrix}$$

A useful addition here would be the aggregational-time apporach. The set of bundles on which the agent-i's bundle is projected, expresses the set of possibilities that the agent could perform. It would then be reasonable to assume that past time realizations are in the knowledge of agents, so they can include them in their possibilites. If time distinction is connected with time-specific exogenous effects, then we should use the formulation above. If, however, time expresses cumulative experience, then aggregational time sets can be included as follows:

(Aggregated $t \in \{0, 1\}$, input orientation, CRS technology, 2-inputs, 1-output)

$$D(\mathbf{z}^0, \mathbf{x}^0; t = 1) = min \left\{ \theta : \theta x_{ni}^0 \geq \sum_{k=1}^{K} \sum_{t=0}^{1} \lambda_k^t x_{nk}^t, \ z_{mi}^0 \leq \sum_{k=1}^{K} \sum_{t=0}^{1} \lambda_k^t z_{mk}^t \geq 0 \right\} =$$

$$= \min_{\boldsymbol{\lambda}} f\boldsymbol{\lambda} \quad \text{so that} \quad A\boldsymbol{\lambda} \leq b \ , \tag{2.58}$$

where $f = \begin{bmatrix} 1 & 0_1^0 & ... & 0_K^0 & 0_1^1 & ... & 0_K^1 \end{bmatrix}$

and $A\boldsymbol{\lambda} \leq b \Leftrightarrow$

$$\begin{bmatrix} -x^0_{1i} & x^0_{11} & ... & x^0_{1K} & x^1_{11} & ... & x^1_{1K} \\ -x^0_{2i} & x^0_{21} & ... & x^0_{2K} & x^1_{21} & ... & x^1_{2K} \\ 0 & -z^0_1 & ... & -z^0_K & -z^1_1 & ... & -z^1_K \end{bmatrix} \begin{bmatrix} \theta \\ \lambda^0_1 \\ \vdots \\ \lambda^0_K \\ \lambda^1_1 \\ \vdots \\ \lambda^1_K \end{bmatrix} \leq \begin{bmatrix} 0 \\ 0 \\ -z^0_i \end{bmatrix}$$

Introducing a Heterogeneity state-factor s, here is an example expression, for bundle-t=0, fontier-t=1 (one of T time periods) and s=3 (one of S different states):

$$\begin{aligned} &(s \in [0, S], \text{ aggregated } t \in [0, T], \text{ input orientation, CRS, 2-inputs, 1-output}) \\ &D(\mathbf{z}^0, \mathbf{x}^0; t = 1, s = 3) = \\ &= min\left\{ \theta : \theta x^0_{ni} \geq \sum_{k=1}^{K} \sum_{t=0}^{1} \lambda^{t3}_k x^{t3}_{nk},\ z^0_{mi} \leq \sum_{k=1}^{K} \sum_{t=0}^{1} \lambda^{t3}_k z^{t3}_{mk} \geq 0 \right\} = \\ &= \min_{\boldsymbol{\lambda}} f\boldsymbol{\lambda} \quad \text{so that} \quad A\boldsymbol{\lambda} \leq b\ , \\ &where\ \ f = \begin{bmatrix} 1 & 0^{03}_1 & ... & 0^{03}_K & 0^{13}_1 & ... & 0^{13}_K \end{bmatrix} \\ &and\ A\boldsymbol{\lambda} \leq b \Leftrightarrow \end{aligned} \tag{2.59}$$

$$\begin{bmatrix} -x^0_{1i} & x^{03}_{11} & ... & x^{03}_{1K} & x^{13}_{11} & ... & x^{13}_{1K} \\ -x^0_{2i} & x^{03}_{21} & ... & x^{03}_{2K} & x^{13}_{21} & ... & x^{13}_{2K} \\ 0 & -z^{03}_1 & ... & -z^{03}_K & -z^{13}_1 & ... & -z^{13}_K \end{bmatrix} \begin{bmatrix} \theta \\ \lambda^{03}_1 \\ \vdots \\ \lambda^{03}_K \\ \lambda^{13}_1 \\ \vdots \\ \lambda^{13}_K \end{bmatrix} \leq \begin{bmatrix} 0 \\ 0 \\ -z^0_i \end{bmatrix}$$

Notice that the input-output bundle does not carry a state indicator, because we can project bundles on sets of the same state, but also of different state.

And thus we conclude with the adequate forms to express the part of Heterogeneity. For the part of Uncertainty, here is an example expression, for bundle-t=0, fontier-t=1 (one of T time periods) and ϵ=3 (one of E different states), where s an uncertainty input factor:

$$
\begin{aligned}
&(s^{\epsilon} \in [s^0, s^E], \text{ aggregated } t \in [0,T], \text{ input orientation, CRS, 2-inputs, 1-output})\\
&D(\mathbf{z}^0, \mathbf{x}^0, s^{03}; t=1) =\\
&= min\left\{\theta : \theta x^0_{ni} \geq \sum_{k=1}^{K}\sum_{t=0}^{1} \lambda^t_k x^t_{nk},\ z^0_{mi} \leq \sum_{k=1}^{K}\sum_{t=0}^{1} \lambda^t_k z^t_{mk},\ s^{03}_i \geq \sum_{k=1}^{K}\sum_{t=0}^{1} \lambda^t_k s^t_k \right\} =\\
&= \min_{\boldsymbol{\lambda}} f\boldsymbol{\lambda} \quad \text{so that} \quad A\boldsymbol{\lambda} \leq b\ ,\\
&where\ \ f = \begin{bmatrix} 1 & 0^0_1 & ... & 0^0_K & 0^1_1 & ... & 0^1_K \end{bmatrix}\\
&and\ A\boldsymbol{\lambda} \leq b \Leftrightarrow
\end{aligned}
\tag{2.60}
$$

$$
\begin{bmatrix}
-x^0_{1i} & x^0_{11} & ... & x^0_{1K} & x^1_{11} & ... & x^1_{1K}\\
-x^0_{2i} & x^0_{21} & ... & x^0_{2K} & x^1_{21} & ... & x^1_{2K}\\
-s^0_{2i} & s^0_{21} & ... & s^0_{2K} & s^1_{21} & ... & s^1_{2K}\\
0 & -z^0_1 & ... & -z^0_K & -z^1_1 & ... & -z^1_K
\end{bmatrix}
\begin{bmatrix} \theta \\ \lambda^0_1 \\ \vdots \\ \lambda^0_K \\ \lambda^1_1 \\ \vdots \\ \lambda^1_K \end{bmatrix}
\leq
\begin{bmatrix} 0 \\ 0 \\ 0 \\ -z^0_i \end{bmatrix}
$$

The Uncertainty factor is presented here with a double superscript, $s^{t\epsilon}$, with the state superscript only over agent-i's decision. The superscript t will always be in accordance with that of the output-input bundle (z^t, x^t), so it can also be omitted[4]. The superscript ϵ denoting the state of uncertainty, has a range of values $\epsilon \in [0, E]$. One of them, probably 0, should denote the benchmark state of certainty, i.e. the realized value of s^0, so as to be compared to alternative decisions that the agent can make.

Finally, here follows the DEA linear programming expression of the introduction of an

[4]Inputs, outputs and uncertainty factors carry different time superscripts, so as to enable the examination of bundles with different time mixtures, e.g. today's input with tomorrow's output. Such a form does not describe a set of plausible conditions, but rather a hypothetical agent's decision, which is out of this thesis' interest.

uncertainty factor, this time as an uncertainty output:

$$
\begin{aligned}
&(s^{\epsilon} \in [s^0, s^E], \text{ aggregated } t \in [0,T], \text{ input orientation, CRS, 2-inputs, 1-output})\\
&D(\mathbf{z}^0, \mathbf{x}^0, s^{03}; t=1) = \\
&= min \left\{ \theta : \theta x^0_{ni} \geq \sum_{k=1}^{K} \sum_{t=0}^{1} \lambda^t_k x^t_{nk},\ z^0_{mi} \leq \sum_{k=1}^{K} \sum_{t=0}^{1} \lambda^t_k z^t_{mk},\ s^{03}_i \leq \sum_{k=1}^{K} \sum_{t=0}^{1} \lambda^t_k s^t_k \right\} = \\
&= \min_{\boldsymbol{\lambda}} f\boldsymbol{\lambda} \quad \text{so that} \quad A\boldsymbol{\lambda} \leq b\ , \\
&where\ \ f = \begin{bmatrix} 1 & 0^0_1 & ... & 0^0_K & 0^1_1 & ... & 0^1_K \end{bmatrix}\\
&and\ A\boldsymbol{\lambda} \leq b \Leftrightarrow
\end{aligned}
\tag{2.61}
$$

$$
\begin{bmatrix}
-x^0_{1i} & x^0_{11} & ... & x^0_{1K} & x^1_{11} & ... & x^1_{1K} \\
-x^0_{2i} & x^0_{21} & ... & x^0_{2K} & x^1_{21} & ... & x^1_{2K} \\
0 & -s^0_{21} & ... & -s^0_{2K} & -s^1_{21} & ... & -s^1_{2K} \\
0 & -z^0_1 & ... & -z^0_K & -z^1_1 & ... & -z^1_K
\end{bmatrix}
\begin{bmatrix} \theta \\ \lambda^0_1 \\ \vdots \\ \lambda^0_K \\ \lambda^1_1 \\ \vdots \\ \lambda^1_K \end{bmatrix}
\leq
\begin{bmatrix} 0 \\ 0 \\ -s^{03} \\ -z^0_i \end{bmatrix}
$$

With these stepping stones set, we can move on to the application on real datasets and try the main SC framework, as well as some useful variations.

2.7 Applications in agriculture

In this chapter, two empirical applications of the SC approach are presented with the use of DEA, based on the Malmquist index measure and decomposition produced previously. A real dataset of olive-oil production is used, where a malicious fly that harms production plays the role of the exogenous random factor. The first application treats this pest as a bad input that is not known when production decisions are made, thus playing the role of uncertainty. The use of pesticides here is preemptive. The second application considers the level of the pest to be known to producers, so they can react with the use of pesticides, but the productivity and efficiency measures take into account the differences of pest infestation among producers as an effect of heterogeneity. Technical change is calculated in regards to the following year and the potential of each year includes all former years (accumulating techical progress).

2.8 Dataset on agricultural production

- k: 50 farms located in western Crete, Greece
- t: 6 annual time periods, 1999-2005
- z: single-output production of olive-oil, measured in kgs of olive-oil
- $\mathbf{x}$: known inputs
  - Labor, measured in days of work
  - Fertilizers, kgs of aggregated various components, using divisia indices with cost shares used as weights
  - Intermediate inputs
  - Pesticide materials, measured in grams
  - Land area, measured in stremmas, a greek unit of land area equal to 1,000 square metres, also called the "royal stremma". 1 hectare = 10 stremmas.
- s: uncertainty factor, the olive fruit fly pest infestation, accurately measured in number of flies caught in traps over land area

The farms are located in a concentrated region, rendering them quite homogeneous in a wide range of factors; no significant differences should be present on environmental conditions, while the access of farmers in sources of information, resources and expertise are common. Farm wonership is mostly family oriented, following traditional methods of production that are almost identical among producers. Moreover, these methods leave an insignificant environmental trace to the soil, which also helps in the production homogeneity of the area.

The uncertainty factor measured is the olive fruit fly (Bactrocera oleae, Dacus oleae) a phytophagous species, whose larvae feed on the fruit of olive trees, probably the most serious pest in the cultivation of olives. It is mostly met in northern, eastern and southern Africa, Southern Europe, Canary Islands, India, and western Asia, while in North America it was first detected in 1998, infesting olive fruits on landscape trees in Los Angeles County. In the Western Hemisphere, it is currently restricted to California. The fact that it infests only the fruit and not the trees, makes the effect of the pest specific to the time period of infestation, i.e. one year's infestation does not cause any effects to the production of following years. Moreover, it is usually the single most serious threat to olive-oil production, thus making it an ideal candidate in the research of uncertain exogenous effects. The available data on infestation here have been collected through traps and accurate measurement of flies caught in each farm over the land area of the farm.

Since pest infestation is measured in terms of flies per land area, in what follows it is considered useful to use all input and output data in ratios per land area. Apart from the apparent intuition that measurements of productivity and efficiency should be presented in this form, it also suits the fact that the land market is not very mobile because of the tradition of small farm production in the area.

All inputs are divided by land area and pest infestation is treated as a bad input, so the list of inputs becomes:

1. Labor p.l. (per land)
2. Fertilizers p.l.
3. Intermediate inputs p.l.
4. Pesticide materials p.l.
5. Pest infestation p.l., treated as bad input or positive secondary output

2.9 App1: Pest as unknown bad input.

The first application treats pest infestation as a bad input that is not known when production decisions are made, thus playing the role of uncertainty. Therefore, the use of pesticides here is preemptive and based on expectations and riske averseness. The state-heterogeneity effect is calculated considering that instead of a given level of pest infestation, noted as s=0, the producer could face a different level of pest infestation s=1. Measuring productivity change from an observation (s,t)=(0,0) to next year's observation (s,t)=(0,1) produces what would happen if next years decision would be accompanied by another level of infestation, e.g. last year's pest infestation or the average infestation of the same year. Here follow the results for input distance functions, CRS technology and comparison with the same year's average infestation:

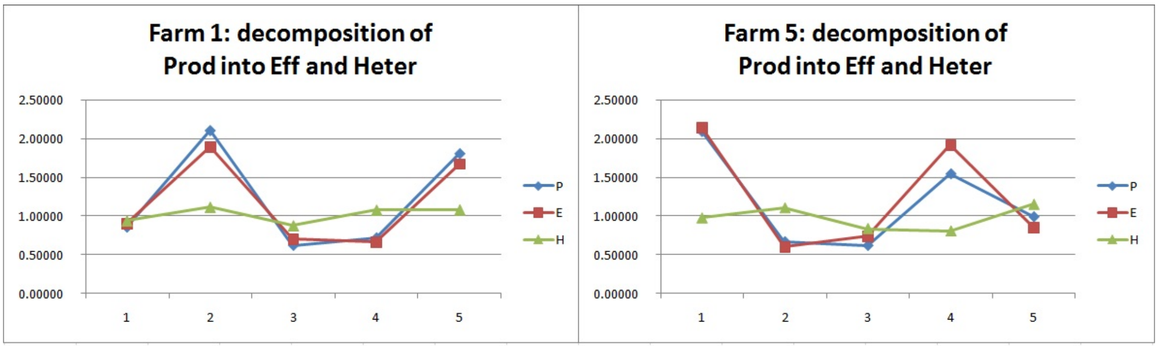

Figure 2.4: *Pest as unknown bad input, Productivity into Efficiency and Heterogeneity.*

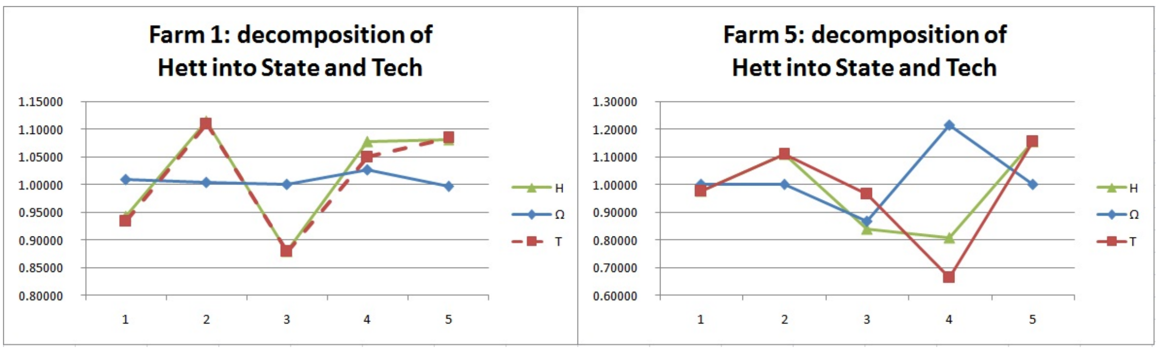

Figure 2.5: *Pest as unknown bad input, Hetterogeneity into State and Tech change*

Average across farms for each year					
year	avT	avΩ	avH	avE	avP
1	1.3923	1.24153	1.56556	1.1004	1.38036
2	3.85465	2.22627	6.64086	1.02652	5.23425
3	2.35134	1.727	3.6435	1.10894	2.79601
4	2.21119	2.35397	3.58406	1.0712	3.17818
5	0.94646	1.71356	1.87441	1.14907	1.59745

Table 2.1: *Pest as unknown bad input, average overall measures for each year*

2.10 App2: Pest known - heterogeneity groups

The second application considers the level of the pest to be known to producers, so they can react with the use of pesticides, but the productivity and efficiency measures take into account the differences of pest infestation among producers as an effect of heterogeneity. Observations are divided over pest infestation in three groups, high, medium and low pest infestation. Groups of lower infestation are regarded to enclose groups of higher infestation, because producers of low infestation should be able to perform at least as much asproducers of unfavorable conditions. Hence, observations of low infestation groups should present no state effect (state change = 1) while other groups should present a state effect when compared to lower infestation groups.

In a first version, groups separated in time periods and pest infestation levels are not aggregated:

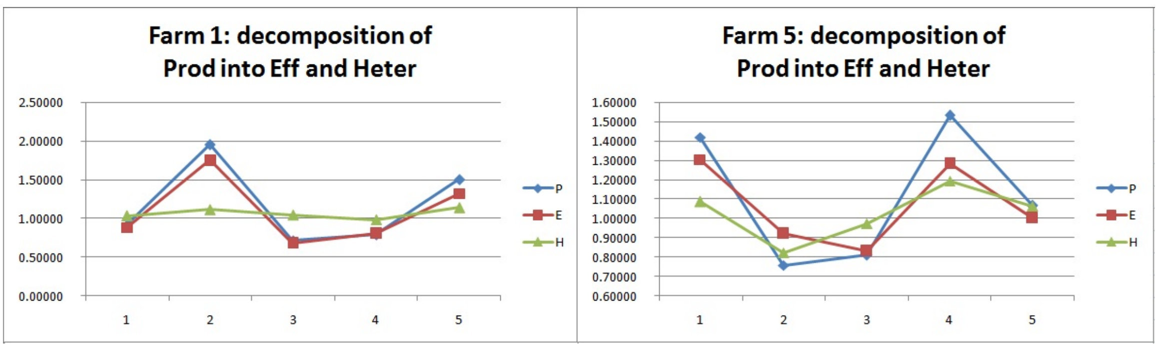

Figure 2.6: *Pest known, equal groups of pest, Productivity into Efficiency and Heterogeneity*

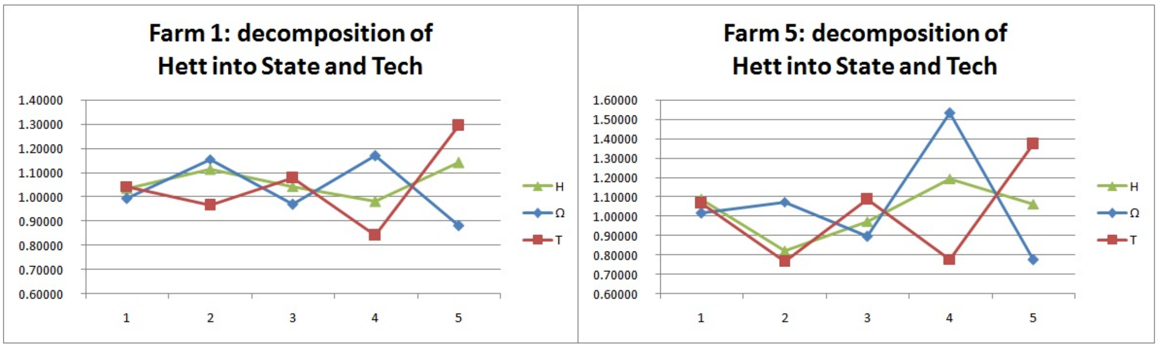

Figure 2.7: *Pest known, equal groups of pest, Hetterogeneity into State and Tech change*

Average across farms for each year					
year	avT	avΩ	avH	avE	avP
1	1.392297	1.241526	1.565564	1.100403	1.380358
2	3.854653	2.226271	6.640861	1.026524	5.234254
3	2.351342	1.726998	3.643501	1.108939	2.796014
4	2.211189	2.353968	3.584063	1.071204	3.178182
5	0.946462	1.713562	1.874405	1.149065	1.597446

Table 2.2: *Pest known, equal groups of pest, average overall measures for each year*

In a second version, the groups of time and pest infestation are aggregating, so that time groups include past time periods and low infestation groups include higher infestation groups:

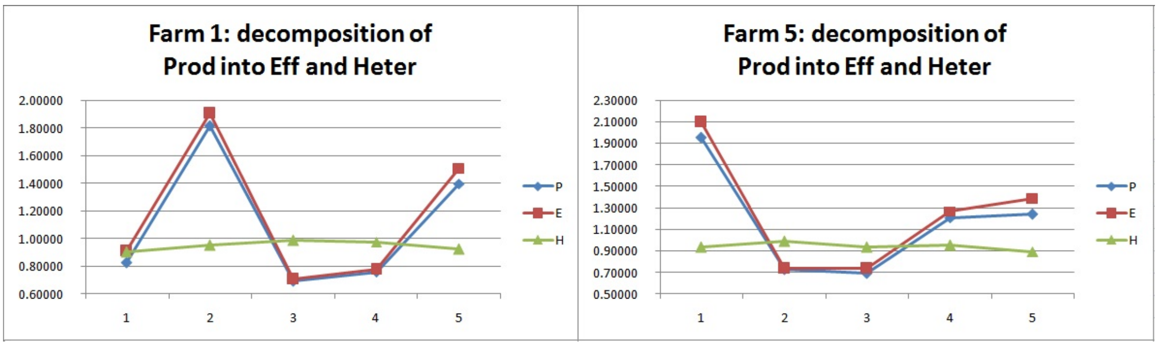

Figure 2.8: *Pest known, equal range of pest, Productivity into Efficiency and Heterogeneity*

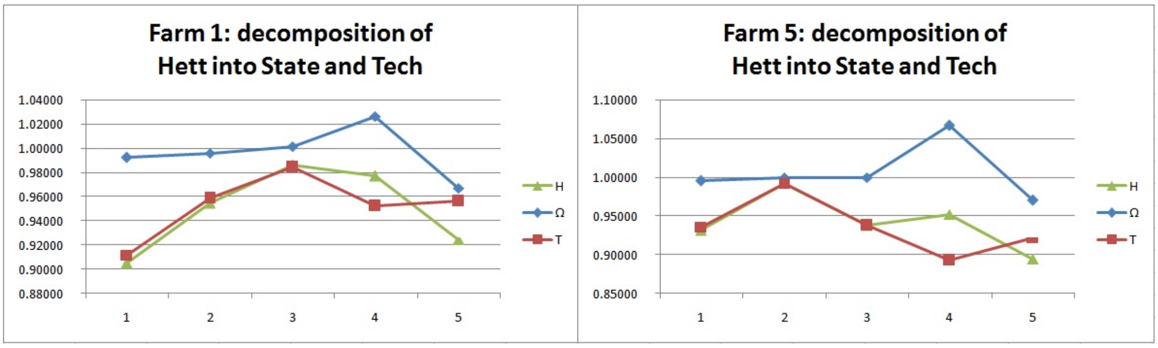

Figure 2.9: *Pest known, equal range of pest, Hetterogeneity into State and Tech change*

Average across farms for each year					
year	avT	avΩ	avH	avE	avP
1	1.392297	1.241526	1.565564	1.100403	1.380358
2	3.854653	2.226271	6.640861	1.026524	5.234254
3	2.351342	1.726998	3.643501	1.108939	2.796014
4	2.211189	2.353968	3.584063	1.071204	3.178182
5	0.946462	1.713562	1.874405	1.149065	1.597446

Table 2.3: *Pest known, equal range of pest, average overall measures for each year*

Chapter 3

A "hyper-feasible" direction for distance functions

In this chapter a new distance function is proposed, named "hyper-feasible". It is actually a specified form of the directional distance function, introduced by Chambers, Färe and Grosskopf (1996). The purpose of this alternative is to set a different direction for distance measures, than the commonly used beginning of the axes, so as to improve some aspects of measurement, while still retaining the useful properties of a radial measure.

3.1 The hyper-feasible direction

Given a partially ordered set (poset) of a specific binary relation, "hyper-feasible" can be defined as the optimum boundary element of a set, i.e. the element that satisfies the binary relation over all the elements of the poset, and any other element with this property satisfies the same relation over this element. Hence, for a poset with the binary relation "≥: greater or equal" - as in outputs, "hyper-feasible" will be the supremum (least upper bound), or equivalently the join of the positive boundary elements of the poset. Likewise, for a poset with the binary relation "≤: less or equal" - as in inputs, "hyper-feasible" will be the infimum (greatest lower bound), or equivalently the meet of the negative[1] boundary elements of the poset.

The supremum of a subset S of a partially ordered set (P, ≥), if bounded from above, is an element p^* of P such that:

$$p^* = sup(S) \Rightarrow \begin{cases} p \geq x, \ \forall \, x \in S \\ p* \leq p, \ \forall \, p \in P \end{cases} \tag{3.1}$$

The infimum of a subset S of a partially ordered set (P, ≤), if bounded from below, is an element p^* of P such that:

$$p^* = inf(S) \Rightarrow \begin{cases} p \leq x, \ \forall \, x \in S \\ p* \geq p, \ \forall \, p \in P \end{cases} \tag{3.2}$$

[1]The term "negative" does not refer to the sign of expression, but to the binary relation that translates into "less is better".

Likewise we can define the optimum boundary for a poset with non specific binary relation. The optimum of a subset S of a partially ordered set (P, $\gtreqless$), if bounded in the direction of the binary relation, is an element p^* of P such that:

$$p^* = opt(S) \Rightarrow \begin{cases} p \gtreqless x, \; \forall \, x \in S \\ p* \lesseqgtr p, \; \forall \, p \in P \end{cases} \tag{3.3}$$

Apart from the cases where the binary relation should (or can) not be specified, the definition of the optimum is needed for partially ordered sets where different binary relations meet, such as in a mixture of inputs and outputs.

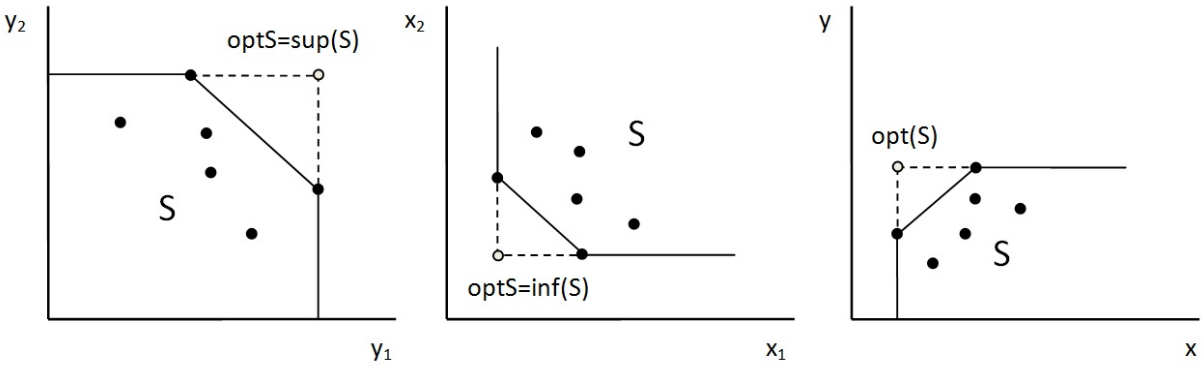

Figure 3.1: *Hyper-feasible element of partially ordered set S, for various binary relations. Supremum for “$\geq$”, infimum for “$\leq$” and optimum for “$\gtreqless$”.*

An important remark here is that the hyper-feasible element does not need to be part of the set S, but only in a greater set P that includes S as a subset and follows the same binary relation. As long as the set is bounded, we can deduct it as the join (or meet) of the bounds of the set. Moreover, we see that the hyper-feasible element holds a radial position over all the elements of S, hence it can replace the beginning of the axis as a direction for radial distance measures.

The hyper-feasible direction does not fit in the common radial distance measures, but we can use the directional distance function in a way that preserves radial properties. The directional distance function is a valuable instrument for the measurement of productive efficiency, introduced by Chambers and co-authors in 1996[2], as a development of Luenberger’s (1992) shortage function which generalizes Shephard’s input and output functions. For a first model of directional distance functions, suppose a technology T where:

$$T = \{(\mathbf{x}, \mathbf{y}) : \mathbf{x} \text{ can produce } \mathbf{y}\} \tag{3.4}$$

or equivalently the input and output correspondence

$$L(\mathbf{y}) \subseteq \Re^M_+ \; , \; P(\mathbf{x}) \subseteq \Re^N_+ \tag{3.5}$$

where it holds that

$$(\mathbf{x}, \mathbf{y}) \in T \Leftrightarrow \mathbf{x} \in L(\mathbf{y}) \Leftrightarrow \mathbf{y} \in P(\mathbf{x}) \tag{3.6}$$

[2]See Chambers, Färe and Grosskopf (1996), Chambers, Chung and Färe (1996, 1998).

Given a directional vector $\mathbf{g} \in \Re_{+}^{M+N}$ with $\mathbf{g} \neq \mathbf{0}$, the directional distance function defined on the technology T is:

$$D(\mathbf{x}, \mathbf{y}; \mathbf{g}) = sup\{\beta : (\mathbf{x} - \beta \mathbf{g_x} \ , \ \mathbf{y} + \beta \mathbf{g_y}) \in T\}, \ \mathbf{g} = (\mathbf{g_x}, \mathbf{g_y}) \tag{3.7}$$

Input and output distance functions can be deducted as special cases of the directional distance function, for $\mathbf{g_y} = \mathbf{0}$ and $\mathbf{g_x} = \mathbf{0}$ respectively. Hence, we can derive the radial (Shepard's) measures from the directional distance function if we set the non-zero directional vector equal to the realization bundle. For example, the output distance function for the bundle $\{x, y_1, y_2\} = \{10, 2, 1\}$ would be:

$$D^O(x, \mathbf{y}; \mathbf{g}) = sup\{\beta : (10 - \beta \cdot 0 \ , \ (2,1) + \beta \cdot (2,1)) \in T\}, \ \mathbf{g} = (0, (2,1)) \tag{3.8}$$

while the respective input distance function would be:

$$D^I(x, \mathbf{y}; \mathbf{g}) = sup\{\beta : (10 - \beta \cdot 10 \ , \ (2,1) + \beta \cdot (0,0)) \in T\}, \ \mathbf{g} = (10, (0,0)) \tag{3.9}$$

With the flexibility of the directional distance function, we only need to change the directional vector in order to move on a different distance path.

So we see that for radial-to-**0** measures we need a non-zero directional vector equal to the realization bundle.

For the hyper-feasible distance function we only need to set the hyper-feasible bundle as the directional vector. Suppose a technology T is deducted from a set S of k feasible bundles $S = \{(\mathbf{x}, \mathbf{y})_1, \ ... \ , (\mathbf{x}, \mathbf{y})_k\}_{1 \times k(N+M)}$. Then the hyper-feasiblel bundle is $(-\mathbf{x*}, \mathbf{y*}) = \underset{\mathbf{x}\ ,\ \mathbf{y}}{max} S$ i.e. the bundle of maximum outputs and minimum inputs.

In general terms, the directional distance vector can be specified for every input and output separately, i.e:

$$\mathbf{g} = (\mathbf{g_x}, \mathbf{g_y}), \ \mathbf{g_x} = \{g_{x_1}, \ ... \ , g_{x_N}\}, \ \mathbf{g_y} = \{g_{y_1}, \ ... \ , g_{y_M}\} \tag{3.10}$$

The Shephard's radial distance function, which has the beginning-of-axes as direction, can be formulated as a special case if we set the directional measures equal to the bundle $(\mathbf{x}, \mathbf{y})$ itself. :

$$D(\mathbf{x}, \mathbf{y}; \mathbf{g}) = sup\{\beta : (-\beta \mathbf{g_x}, \ \beta \mathbf{g_y}) \in T\}, \ \mathbf{g} = (\mathbf{g_x}, \mathbf{g_y}) \tag{3.11}$$

where the directional vector is adjusted for input distances as:

$$\mathbf{g} = (\mathbf{g_x}, \mathbf{g_y}) = (\mathbf{g_x}, \mathbf{0}), \ \mathbf{g_y} = \{0_1, \ ... \ , 0_M\}, \ \mathbf{g_x} = \{g_x, \ ... \ , g_x\}_{1 \times N} \tag{3.12}$$

and for output distances we have:

$$\mathbf{g} = (\mathbf{g_x}, \mathbf{g_y}) = (\mathbf{0}, \mathbf{g_y}), \ \mathbf{g_x} = \{0_1, \ ... \ , 0_N\}, \ \mathbf{g_y} = \{g_y, \ ... \ , g_y\}_{1 \times M} \tag{3.13}$$

Then, in order to produce a distance measure for a realization bundle towards $\{\mathbf{0},\mathbf{0}\}$, we set the directional vector equal to the bundle's values. For example, the output distance function for the bundle $\{x, y_1, y_2\} = \{10, 2, 1\}$ would be:

$$D(x, \mathbf{y}; \mathbf{g}) = sup\{\beta : (-\beta \cdot 0, \ \beta \cdot (2,1)) \in T\}, \ \mathbf{g} = (0, (2,1)) \tag{3.14}$$

For the hyper-feasible distance function we can use a radial directional vector, i.e. $g_x = g_y = g$. Then, the s.o. directional distance function can be written as:

$$D(x, y; \mathbf{g}) = sup\{\beta : (x - \beta g_x,\ y + \beta g_y) \in T\},\ \mathbf{g} = (g, g) \tag{3.15}$$

3.2 Hyper-feasible technology

But why should we call this boundary element as "hyper-feasible"? If we translate technology in terms of a state-approach, the boundaries of a technology are defined by the exogenous conditions that are expressed by states. A more flexible set of states would produce broader technlology boundaries, while a strict and extensive set of exogenous states would not leave much space for feasible options. The State-Contingent apporach is allowing for all technologies to be viewed as special cases of a general state-based framework. Then we can define as hyper-feasible technology the one that would be preferred over the least restrictive set of states. Most certainly, the conditions cannot always be optimal, but as we move from less to more favorable conditions, we can trace the direction that a decision maker would follow over an evolving set of states. Thus we can use the hyper-feasible benchmark to evaluate decisions under uncertainty, with the latter being depicted as an elastic state space.

To see how the hyper-feasible element stands as an intuitive direction for producers' decisions, let's think about the prodecure of deducting the form of technology from a set of realized input-output bundles. With the term "technology" we characterize the frontier of optimal feasible elements, as well as all the elements lying beneath this frontier. This is widely accepted because of the very intuitive and straightforward property of free disposability, which roughly states that "if you can achieve something, then you can certainly achieve less than that". However, free disposability alone is usually not considered enough to adequately represent actual technologies, so more assumptions are made in order to obtain useful properties such as convexity or smootheness.

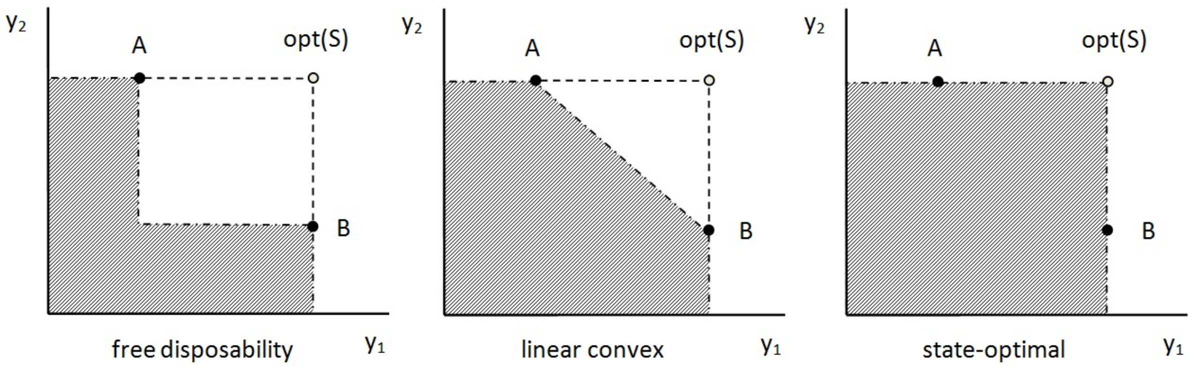

Figure 3.2: *Deducted feasible sets for two realizations A and B under various technology restrictions.*

In figure 3.2 we see examples of technologies deduced from two realizations A and B, in a double-output space. The first shaded area in figure 3.2-left represents the bundles that are feasible for the set {A,B} under free disposability, that is the union of the feasible sets for each realization separately under free-disposability. Then, in figure 3.2-center we see the convex set produced if we add to free dsposability the assumption of a lineary convex feasible set. Finally, in figure 3.2-right, the grey area covers what would be feasible if we consider as possible a hyper-feasible technology. The free disposability and the hyper-feasible cases seem to be quite far fetched for a real technology representation, but they act as borders of the area where an actual technology should lie. Furthermore, as we move from free-disposability to hyper-feasible, we satisfy and follow the direction of the binary relation governing the set of realizations. Free-disposability produces for each realization a respective lattice (a poset with unique optimal bound the realization itself) and the lattice of the hyper-feasible element is the smallest one to include the lattices of all realizations as sub-lattices with the same binary relation.

3.3 Advantages in efficiency measurement

Setting the hyper-feasible boundary as the direction for distance measures instead of the beginning of the axes, provides a number of significant advantages. First of all, it comes with a well-grounded support to be a destination point for all the agents of a common technology set. As free-disposability defines a set of feasible bundles under each realization, the hyper-feasible boundary defines the smallest set to include all realizations under the same preference relation. The intuition must have been the same when the beginning of the axes was initially chosen as a direction point for input distance measures; in sets of inputs the preference relation "$\leq$", roughly translated as "less is better", naturally makes the axes' starting point of zero-input-use a most desired bundle. However, this neglects the particularity with which a technology characterizes the ratio of input use, imposing a uniform 1:1 ratio on every applied technology. In contrast, the hyper-feasible approach proposes a ratio expressing the set of realizations, allowing it to be technology-specific. Besides, all the valuable characteristics of the $\{0,0\}$ direction, such as the radial placement over all realizations of the set, as well as being unaffected by units of meaurement, they are also holding for the hyper-feasible orientation.

Yet the most important advantage of this proposed orientation can be observed on efficiency measurement, where it serves as a treatment for the problem of slacks[3]. These are areas of technology frontiers where obvious efficiency differences are difficult to measure, because radial-to-$\{0,0\}$ expansion or contraction of bundles cannot move to more efficient feasible alternatives.

[3]Alternative treatments have been proposed for the problem of slacks, but they come along with specification restrictions or other measurement disadvantages.

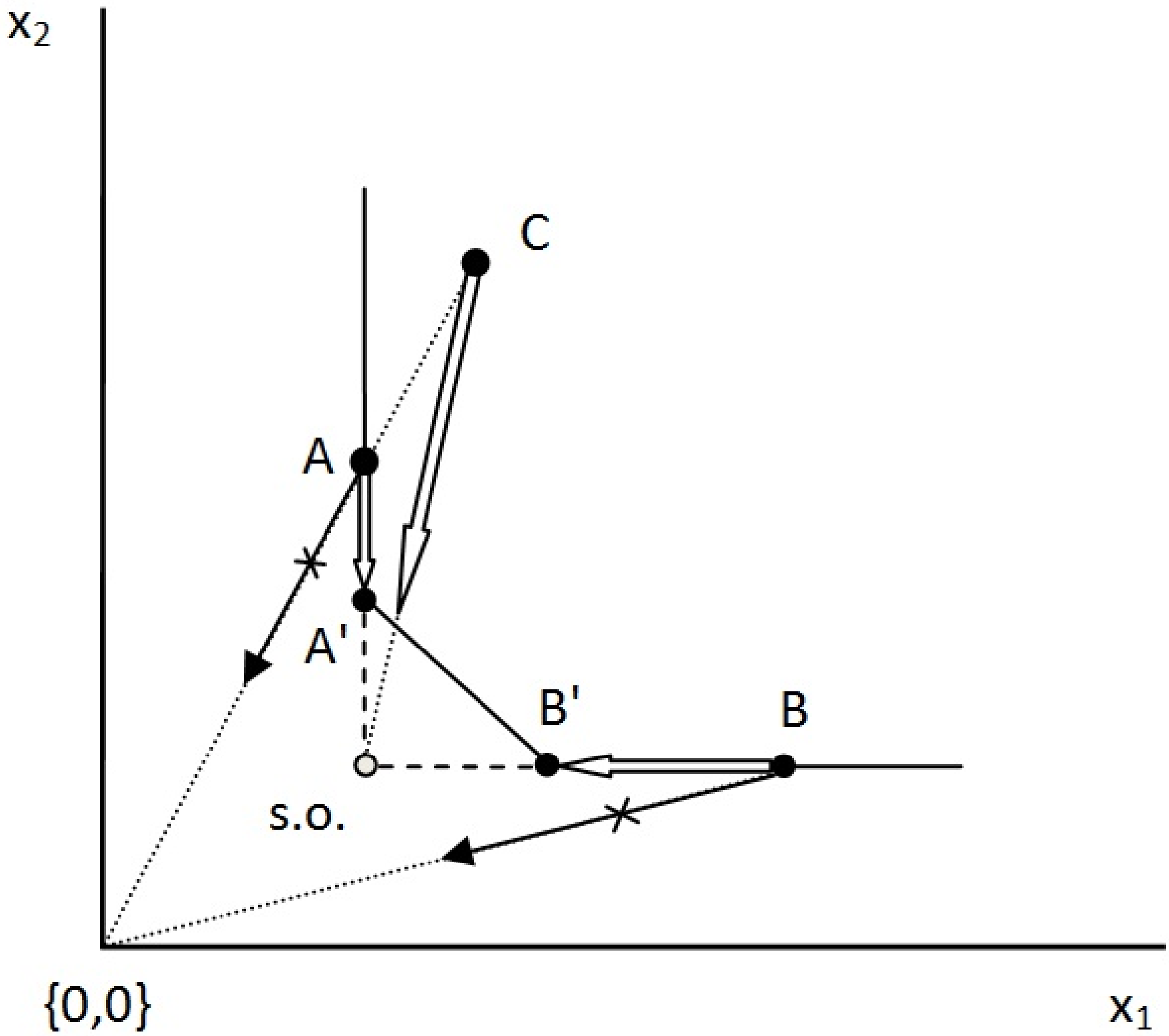

Figure 3.3: *Slacks' restrictions of {0,0} direction versus hyper-feasible (s.o.).*

Figure 3.3 shows some cases of slacks' mismeasurement and the alternative solution of the hyper-feasible distance direction. Bundle A' is preferred to bundle A (ceteris paribus) by the definition of efficiency, because moving from A to A' saves some quantity of x_2 while keeping the same quantity of x_1, and the same holds for the shift from B to B' saving x_1 and keeping x_2 fixed. Unfortunately, for boundary bundles like A and B, movements like this are not possible using the direction to {0,0}, because it pushes to bundles out of the feasible set. On the contrary, the hyper-feasible direction satisfies efficient bundle contraction (expansion for outputs) for all the elements of the feasible set. But the problem in efficiency measurement does not arise only for boundary points. For example in the same figure 3.3, the contraction of bundle C towards {0,0} will reach the technology frontier at point A, while towards the s.o. it will meet the frontier closer to the more efficient bundle A'.

A last remark here is on the returns-to-scale of the technology. One could support that the effect of this methodology on efficiency measurement is significant because of the assumed type of convex technology, while using other types of technology would not result in much of a difference. Hence, if for example we choose a CRS technology instead of VRS, the shape of the frontier is such that slacks are diminished, because the frontier does not meet the axes in a perpendicular way. But this is not a viable alternative for a number of reasons. At first and most important, the difference between CRS and VRS technologies refers only to the relationship between inputs and outputs, while in the multi-input and multi-output areas the technology is always convex. This happens most certainly in linear programming methodologies like DEA, where returns-to-scale do not affect the restricitons among inputs and among outputs: $x_{ni} \geq \sum_{k=1}^{K} \lambda_k x_{nk}$ and $y_{mi} \leq \sum_{k=1}^{K} \lambda_k y_{mk}$. Hence, in the example of figure 3.1, changing from VRS to CRS technology would affect only figure 3.1-right, while the center and left figures would be the same. Moreover, the choice of CRS has a number of disadvantages against VRS, as the critical effect of outliers and the uniform scale of production, while a CRS frontier of unjustified steep inclination would still produce mismeasurements similar to slacks.

3.4 In search of advanced measures

As seen in the previous section, the problem of slacks produces inaccurate distance measures, especially close to the axis where convex sets are perpendicular, but also raises the question of which would be a "proper" direction for accurate distance function measurements. Numerous articles have signified the biases produced when neglecting this issue, but few have proposed coherent solututions. Portela and Thanassoulis (2006) is an example paper demonstrating various problems with traditional ways of calculating Total Factor Productivity (TFP) and the bias produced in Malmquist index. Moreover, they propose an alternative measure, the Geometric Distance Function (GDF)[4], so as to encounter these problems.

Portela and Thanassoulis with their proposed new function intuitively support, that the source of the problem lies in the combined measurement of differentiated factors. In figure 3.3, if we try to calculate the efficiency and productivity difference from point A to another point, for example to point B, a radial measure would not allow for such a movement as it would expand both outputs to a direction out of the feasible area. Hence, we would need a differentiated measurement for each factor in order to incorporate the biases of slacks. Portela and Thanassoulis' GDF is indeed the geometric average of factor specific distances, as follows:

$$GDF = \frac{(\Pi_i \theta_i)^{1/n}}{(\Pi_j \beta_j)^{1/m}} \tag{3.16}$$

where n,m are the numbers of inputs and outputs respectively, θ_i represents the ratio between a target input and an observed input i (x_i^*/x_i) and β_j represents the ratio between a target output and an observed output j (y_j^*/y_j). Hence, the GDF is a way to "aggregate varying expansion and contraction factors towards target levels on the production frontier".

This factor-specific and geometric-average function is an interesting proposition, especially in the effort to address the problem of slacks and other biases. However, the goal of creating a coherent distance measure towards the technical frontier might not be achieved this way. In figure 3.4 we see examples where a factor specific distance function would

[4] The Geometric Distance Function (GDF) was initially introduced in Portela and Thanassoulis (2002).

overestimate the distance of a bundle from the frontier. In figure 3.4-left, bundle A should double the output z_2 so as to reach the frontier at bundle B, while we should double the output z_1 in order to reach bundle Γ. However, if we double the bundle (z_1, z_2) of A radially, it will reach point E instead of point Δ, that is the proper frontier expansion point of A. Likewise in figure 3.4-right, in the multi-input space, bundle A should reduce input x_2 by 1/2 in order to reach point B and also reduce input x_1 by 1/2 in order to reach point Γ, but radially reducing both inputs by 1/2 would reach point E instead of point Δ, which lies on the frontier.

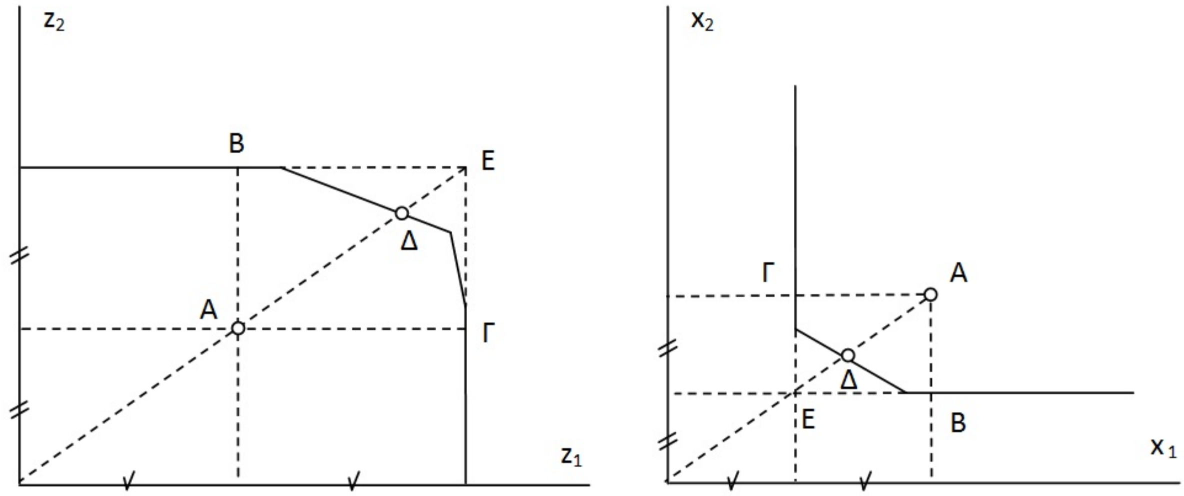

Figure 3.4: *Factor-specific distance does not coincide with radial distance on convex technologies. The effected of slacks in the output and input area respectively.*

Although propositions like the GDF of Portela and Thanassoulis do not provide an outright solution to the treatment of slacks, the intuition behind a factor specific approach could be a good start against the slacks issue but also the key in the pursuit of an input-output measure. In existent distance function technologies, one had to choose between the input and the output direction of distances, by either expanding output bundles or retracting input bundles to frontier level, keeping their respective analogy stable. It would then be reasonable to try a radial input-output measure, but then the slacks problem would once again appear as in the multi-input or multi-output area, while in addition we would need to explain this direction as a plausible producers' decision.

3.5 Infeasibility of cross-set distances

The calculation of distance measures among the elements of a single set is always feasible through the hyper-feasible approach, because the hyper-feasible direction is the optimum (supremum or infimum) created by the very elements of the set. Nevertheless, it can be useful to compare the distance measure of an out-of-set element, to see what would be its performance had it followed this set's technology. Thus we can produce cross-set measures, which have already been seen in the Malmquist index. However, these outside elements need not be in the area covered by the hyper-feasible optimum. In this case, the proposed methodology is presented in figure 3.5; elements that exceed the optimum in every dimension can still follow the hyper-feasible direction, but others should redirect towards a corner point. Finally, for elements that do not exceed a corner point in every dimension, a parallel-to-axis movement is appropriate.

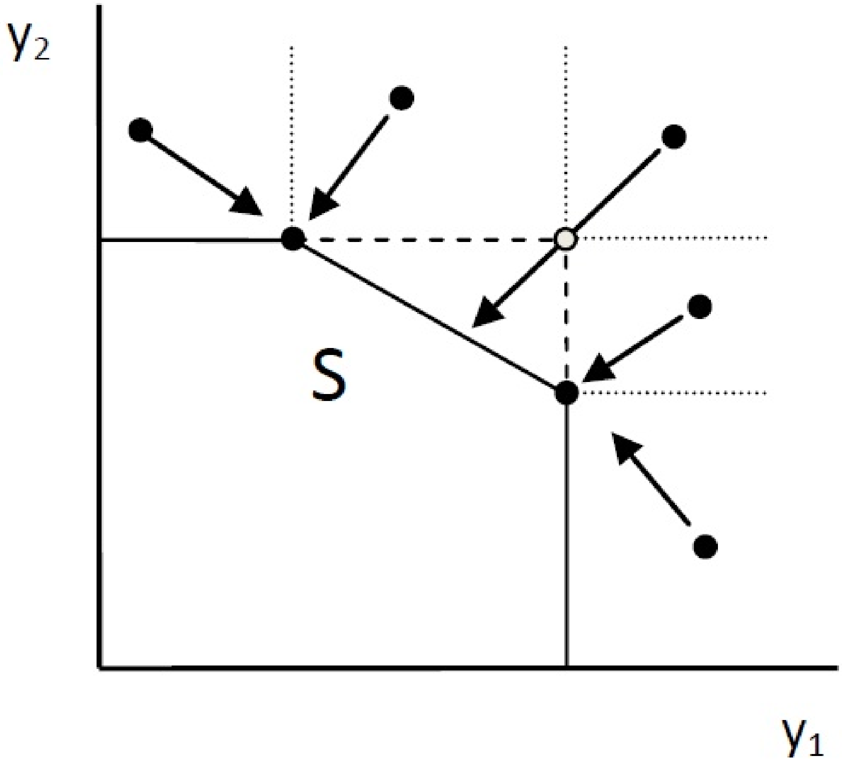

Figure 3.5: *Distance measures for points out of set should follow an adjusted direction.*

3.6 Weighted hyper-feasible direction

The insight of Portela and Thanassoulis (2006) is right about the relative importance of each variable in a distance measure. In figure 3.6 we see two points A and B which lie in a half-way distance from the frontier. However, point A needs to double only y_2 and retain y_1 in the same level, while B needs to double both outputs. This difference could be measured if we assume relative weights for the contribution of each variable to the measure, but only after the distance measure has been calculated for all variables together, otherwise the problems of Portela and Thanassoulis (2006) mention above would arise. The weights can be of equal value for each variable, resulting to an average measure, but they could also be adjusted using additional information. For example, comparing the average weighted measure with weights realtive to output/input prices would present the difference between the volume-specific and the value-specific approach.

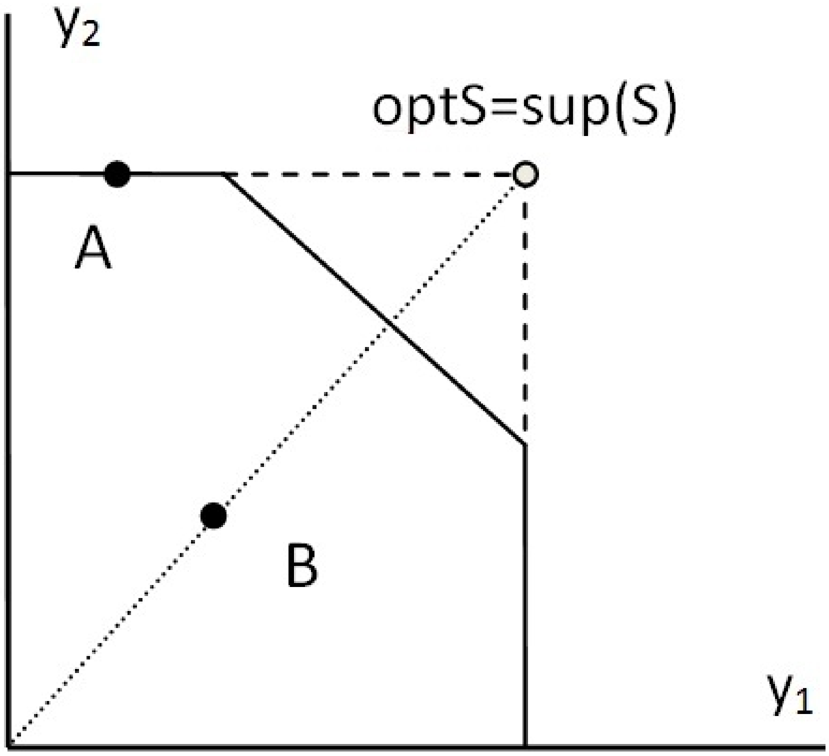

Figure 3.6: *Both points A and B are in a half-way distance to the frontier, but B needs to double both outputs while A is efficient in* y_1.

The weighted hyper-feasible direction could also be used to combine input and output orientations, creating a common measure that would be unaffected by input-output orientation differences.

Chapter 4

A proposed model for decisions under uncertainty

A model for decisions under uncertainty is proposed in this chapter, combining features of the most acclaimed approaches to this day. Reviewing the advantages and shortcomings of the widely cited model of Cumulative Prospect Theory (CPT), some adjustments are suggested in order to incorporate the latest advances of the field. Analyzing the model form a State-Contingent (SC) aspect, one can see that the latter provides a broader framework which can be used as a common ground and connective route between alternative models. We can thus observe that using the SC approach and relaxing the behavioral restrictions of CPT, we can create a model that is not only explanatory of the latest results of literature, but is also robust, intuitive, and in accordance with the most influential benchmark model of Expected Utility (EU). Moreover, an independent endogenous growth model on tax-evasion follows, under the analysis of Kafkalas, Kalaitzidakis and Tzouvelekas (2014), confirming the findings of the proposed approach.

4.1 Brief review on models of uncertainty

The foundations of contemporary analysis of uncertainty lie in the 16th century's work of Gerolamo Cardano[1] on probability theory, and also in the idea of the **Expected Value (EV)**, which was concieved by both Pierre de Fermat and Blaise Pascal, but published by Christiaan Huygens (1657). Regarding uncertain monetary outcomes with specific probabilities (knowledge of how frequently the outcomes may arise in a series of trials) the EV sums the products of uncertain outcomes with their assigned probabilities. Since probabilities add to one, the EV can be regarded as a weighted average of uncertain outcomes, with probabilities being the weights:

$$EV = E(X) = \sum_{i=1}^{n} p_i x_i \ , \ \sum_{i=1}^{n} p_i = 1 \tag{4.1}$$

[1]Gerolamo Cardano's "Book on Games of Chance" (Liber de ludo aleæ) was written around 1564 but it was published (along with nearly all of Cardano's writings) in "Opera omnia" (1663).

The most important criticism on EV came from Nicolas Bernoulli, who first described the St. Petersburg paradox in a letter to Pierre Raymond de Montmort (1713), where a gamble of obvious finite value for decision makers produces an infinite EV. In 1728 Gabriel Cramer, in a letter to Nicolas Bernoulli[2] wrote: "The mathematicians estimate money in proportion to its quantity, and men of good sense in proportion to the usage that they may make of it". A formal solution to this problem was given by Nicola's cousin, Daniel Bernoulli (1738) who introduced the utility[3] notion to the expected value formulation, thus creating the **Expected Utility (EU)** model.

$$EU(X) = \sum_{i=1}^{n} p_i U(x_i) \quad , \quad \sum_{i=1}^{n} p_i = 1 \quad , \quad U : X \to \mathbb{R}^+ \tag{4.2}$$

Expected Utility has been rightfully characterized as "the foundation for most of modern economic theories on uncertainty and risk"[4]. Its simple and intuitive formulation has made it so popular in economic literature that "most in the field are not even aware of the alternatives"[5]. Especially since von-Neumann and Morgenstern (1944) provided the necessary and sufficient conditions under which the EU hypothesis holds, it has been the indisputable benchmark of analysis for decisions under risk, either as a model to use or as the main reference of comparison for alternative models. However, several and notable empirical violations, like the Allais and the Ellsberg paradoxes, have led to the development of plentiful alternative models, that have either tried to build on EU's formulation and amend its problems, or even outplace it entirely with a more successful framework.

Probably the most acknowledged alternative to the EU model has been **Cumulative Prospect Theory (CPT)**, introduced by Tversky and Kahneman (1992), for which Daniel Kahneman shared in 2002 the Nobel Prize[6]. CPT managed to explain, with the use of some behavioral assumptions, a range of situations which appear inconsistent with EU's rationality, as the equity premium puzzle, the asset allocation puzzle, the status quo bias, various gambling and betting puzzles, intertemporal consumption and the endowment effect.

CPT is basically a combination of two precedent models, the Prospect Theory (Tversky and Kahneman (1979)) and the Rank-Dependent Expected Utility Model (RDU, originally called anticipated utility) introduced by Quiggin (1982). PT states that people make decisions based on the potential value of losses and gains rather than the final outcome, evaluating these losses and gains using certain heuristics, thus giving an explanation for the Allais paradox. However, PT faces a problem of violation of first order stochastic dominance, for which RDU uses a weighting function to transform cumulative probabilities instead of probabilities themselves.

The latest significant development in uncertainty analysis for economics and decision theory is the **State-Contingent (SC)** approach of Chambers and Quiggin (2000), which describes decisions under uncertainty as decisions contingent to uncertainty factors (states),

[2] Die Werke von Jakob Bernoulli, Band 3, K9

[3] Until the mid-20th century, Expected Value and Expected Utility were most commonly met as "mathematical expectation" and "moral expectation" respectively. - Jeff Miller's webpage: "Earliest Known Uses of Some of the Words of Mathematics".

[4] Rieger and MeiWang (2006).

[5] Tuthill and Frechette (2002)

[6] Amos Nathan Tversky died in 1996.

resembling a multi-output framework. It thus surpasses behavioral assumptions and provides a new benchmark that relies only on rationality and foundational tools of economic theory, that are less restricitve and analytically more powerful than alternative models. This chapter continues in proposing some alterations that can be made on CPT inspired by the SC approach so as to maintain and expand its useful properties.

4.2 Latest challenges and CPT model

Cumulative Prospect Theory is one of the latest and most acclaimed models for uncertain decisions, developed by Kahneman and Tversky (1992). The first model of Kahneman and Tversky (1979) was called Prospect Theory (PT) and it was an effort to give an explanation for the Allais paradox, as well as to introduce some psychological effects that were indicated by experimental research. The formula of the model is similar to EU, with the main differences being:

- Probabilities are weighted, so as to overestimate extreme-probability events and explain the Allais paradox.
- The utility function (called value function) measures gains and losses from a reference point, and it is also characterized by some axiomatic specifications (concave for gains, convex for losses, steeper losses than gains to exhibit loss aversion).

PT was able to support most of its statements, but it was only formulated for pairs of alternative prospects, and moreover, it gave rise to violations of Stochastic Dominance (SD)[7], because probability weights were not required to sum up to unity. To solve these issues Kahneman and Tversky (1992) proceeded to the development of Cumulative Prospect Theory (CPT) which extends to prospects with a large number of outcomes and also satisfies SD[8]. In order to be consistent with SD, they formed the probability weights based on cumulative probabilities using the rank-dependent or cumulative functional, first proposed by Quiggin (1982) for decision under risk and by Schmeidler (1989) for decision under uncertainty.

SD relations were introduced by Rothschild and Stiglitz (1970) as an efficient way to contrast pairs of distributions. First-order stochastic dominance (FSD) dictates that a shift of probability mass from bad outcomes to better outcomes leads to an improved prospect, while second-order stochastic dominance (SSD) expresses risk-aversion. Equivalently, a distribution f(x) dominates g(x) with FSD when $\int f(x) \leq \int g(x) \Leftrightarrow F(x) \leq G(x)$ and with SSD when $\int\int f(x) \leq \int\int g(x) \Leftrightarrow \int F(x) \leq \int G(x)$. In figure 4.1 we see gamble Γ dominating gambles A and B with FSD, as it yields at least as much outcome for all the range of probability, and strictly more for some part of probability. Gambles Δ (straight line) and E (dashed line) do not dominate each other by FSD[9], but we can say that gamble Δ dominates gamble E by SSD when the lower-left grey area (where $\Delta(x) \geq E(x)$) is bigger than the upper-right (where $\Delta(x) \leq E(x)$). Gamble Δ would also dominate E by SSD if the grey areas were equal, but a concave utility function would value more of outcomes closer to the axis.

[7] Kahneman and Tversky (1979), pp.283-284.

[8] In the words of Kahneman and Tversky (1992) p.299, SD is "an assumption that many theorists are reluctant to give up".

[9] FSD is a stronger assumption than SSD. FSD is also SSD and not the opposite.

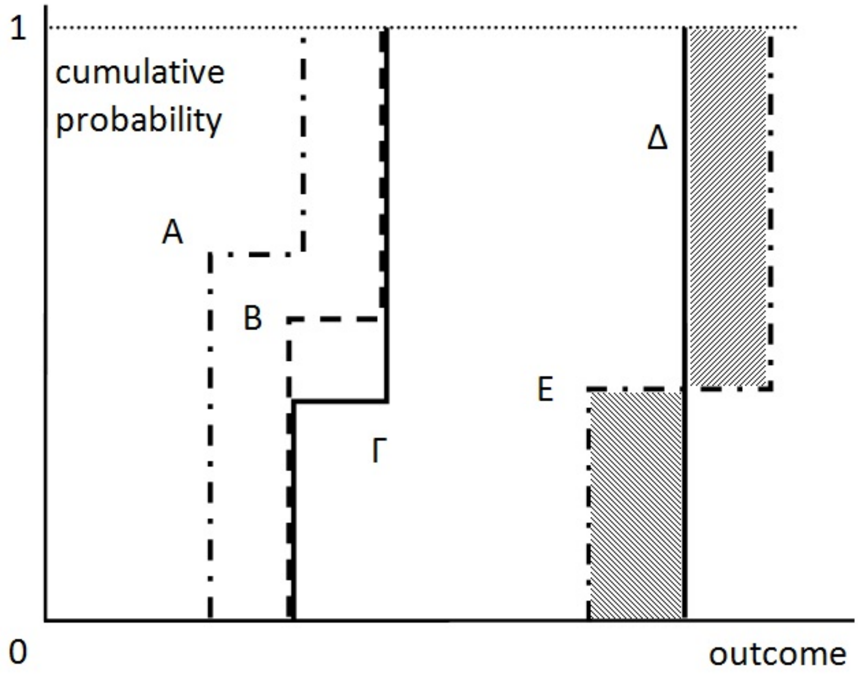

Figure 4.1: *Stochastic dominance in cumulative distributions.* Γ *dominates A and B by FSD. Distribution* Δ *dominates E by SSD when the lower-left grey area is bigger than the upper-right.*

In CPT model, agents make their decisions in two steps; a framing (or editing) phase and a valuation phase. During the framing phase[10] agents decide on a reference (benchmark) point of events, above which outcomes are defined as gains and below which they are seen as losses. This assumption was made in order to explain an observed "framing effect" from experimental observations, where people made a different evaluation for identical outcomes depending on their presentation as being either gains or losses. After the framing phase, agents proceed to the evaluation of their alternative prospects. In CPT an uncertain prospect f is defined as a function from S into X that assigns to each state $s \subset S$ a consequence $f(s) = x \in X$. After rearranging outcomes in an increasing order, the prospect f is represented as a sequence of pairs (x_i, A_i), which yields x_i if A_i occurs, where $x_i > x_j$ iff $i > j$, and A_i is a partition of S. Assuming that there exists a strictly increasing value function $v : X \to \mathbb{R}$, satisfying $v(x_0) = v(0) = 0$, and capacities[11] W^+ and W^-, such that for any uncertain prospect $f = (xi, Ai)$, $-m \leq i \leq n$, the calculated

[10]Kahneman and Tversky (1992) p.299 aknowledge that "no formal theory of framing is available", making the framing phase a part of the model that is mostly dependent on axiomatic assumptions and experimental calibration.

[11]Capacity (Choquet 1955) is a generalized concept of probability, using a nonadditive set function. A capacity W is a function that assigns to each $A \subset S$ a number $W(A)$ satisfying $W(\emptyset) = 0$, $W(S) = 1$ and $W(A) > W(B)$ whenever $A \subset B$.

value (utility) is:

$$V(f) = V(f^+) + V(f^-) \ , \ where: \tag{4.3}$$
$$V(f^+) = \sum_{i=0}^{n} \pi_i^+ v(x_i) \tag{4.4}$$
$$V(f^-) = \sum_{i=-m}^{0} \pi_i^- v(x_i) \tag{4.5}$$

and the probability weights are defined as:

$$\pi_n^+ = W^+(A_n) \tag{4.6}$$
$$\pi_{-m}^- = W^-(A_{-m}) \tag{4.7}$$
$$\pi_i^+ = W^+(A_i \cup \ ... \ \cup A_n) - W^+(A_{i+1} \cup \ ... \ \cup A_n) \ , \ 0 \leq i \leq n-1 \tag{4.8}$$
$$\pi_i^- = W^-(A_{-m} \cup \ ... \ \cup A_i) - W^-(A_{-m} \cup \ ... \ \cup A_{i-1}) \ , \ 1-m \leq i \leq 0 \tag{4.9}$$

Equivalently, if the prospect $f = (x_i, A_i)$ is given by a probability distribution $p(A_i) = p_i$, it can be expressed as a probabilistic or risky prospect (x_i, P_i). In this case, decision weights are defined as:

$$\pi_n^+ = w^+(p_n) \tag{4.10}$$
$$\pi_{-m}^- = w^-(p_{-m}) \tag{4.11}$$
$$\pi_i^+ = w^+(p_i + \ ... \ + p_n) - w^+(p_{i+1} + \ ... \ + p_n) \ , \ 0 \leq i \leq n-1 \tag{4.12}$$
$$\pi_i^- = w^-(p_{-m} + \ ... \ + p_i) - w^-(p_{-m} + \ ... \ + p_{i-1}) \ , \ 1-m \leq i \leq 0 \tag{4.13}$$

Depicted graphically, CPT can be presented using two curves: the value function of outcomes and the weighting function of probabilities. Replacing the traditional utility function, the value function is defined over variations of wealth with respect to some reference point. It is s-shaped, so that outcomes away from the reference point have a diminishing value[12], and it is steeper for losses than gains, so as to express loss aversion.

[12]Kahneman and Tversky (1992) refer to the equivalent property of diminishing marginal utility as diminishing sensitivity.

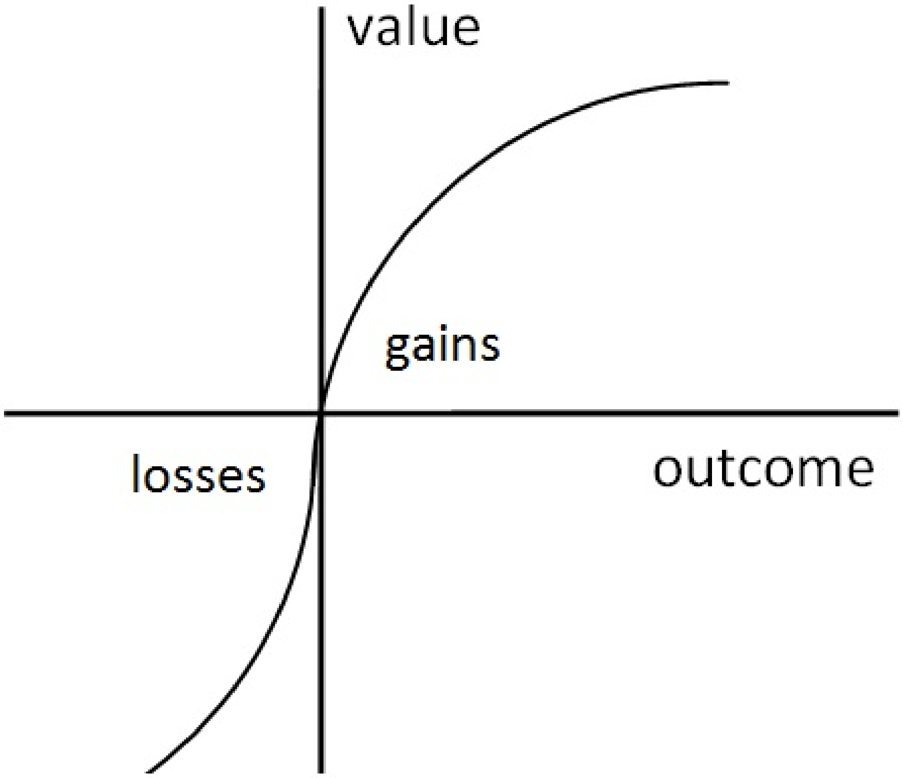

Figure 4.2: *Typical value function for Cumulative Prospect Theory, expressing gains and losses relative to a reference point and loss aversion.*

The probability weighting function transforms objective cumulative probabilities into subjective cumulative weights. It has an inverse-s-shape, so as to overestimate extreme-probability outcomes. It thus suggests a solution for the Allais paradox, which states that agents evaluate more an equal-value 1% probability change from 100% to 99% than from 11% to 10%. In figure 4.3 we see a general form of inverse-s-shaped weighting function that would transform cumulative probabilities with the desired properties, satisfying the Allais paradox without violating stochastic dominance.

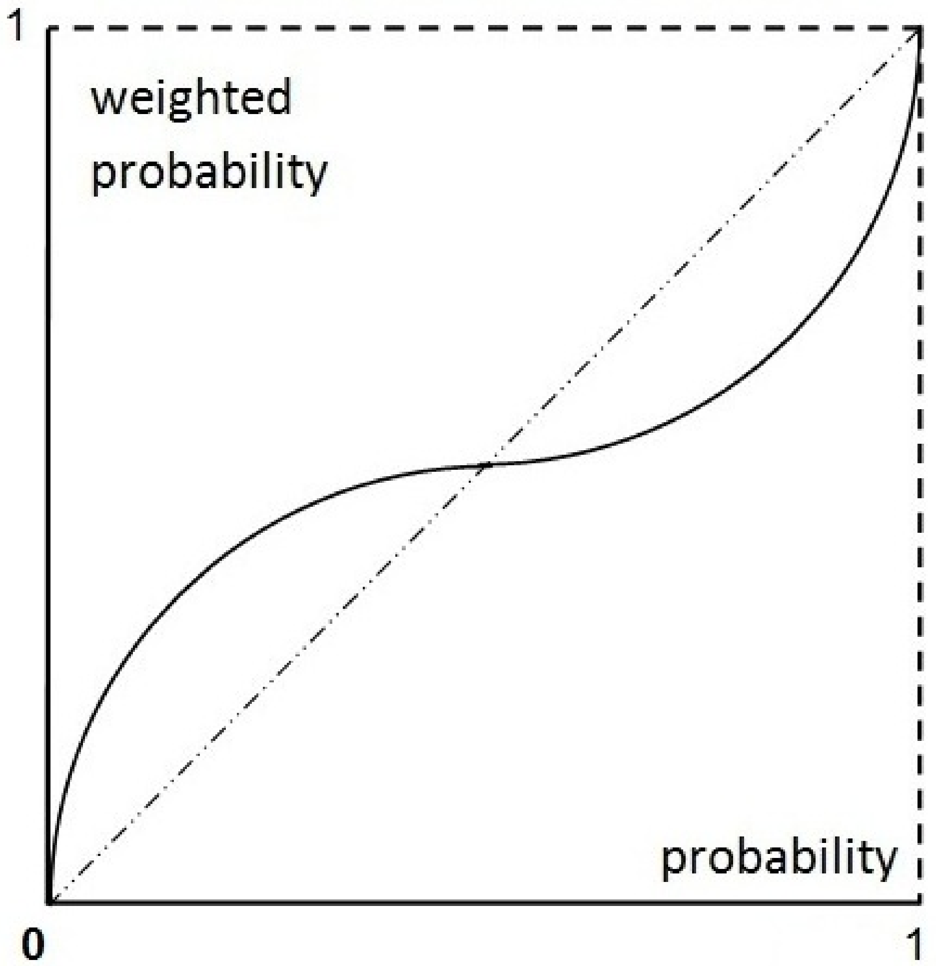

Figure 4.3: *General form of cumulative probability-weighting function for Cumulative Prospect Theory. The inverse-s-shaped is assigning increased value on extreme probabilities, satisfying the Allais paradox.*

Figure 4.3 has a symmetrical inverse-s-shape. However, Kahneman and Tversky (1992) fitted their experimental observations in a skewed curve, following the formula:

$$w^{-}(p) = \frac{p^{\delta}}{(p^{\delta} + (1-p)^{\delta})^{\frac{1}{\delta}}} \quad , \quad w^{+}(p) = \frac{p^{\gamma}}{(p^{\gamma} + (1-p)^{\gamma})^{\frac{1}{\gamma}}} \tag{4.14}$$

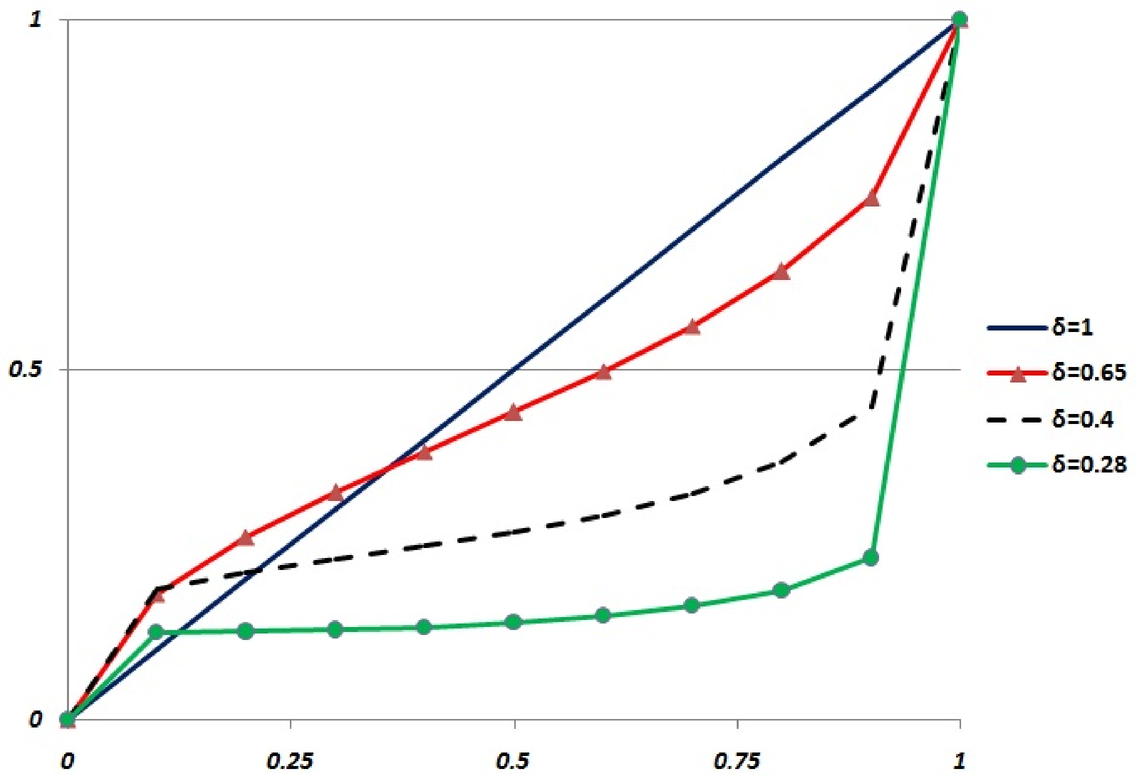

Figure 4.4: *The proposed cumulative probability-weighting function by Kahneman and Tversky (1992) is skewed, while we need* $\delta > 0.28$ *to keep it non-decreasing.*

The general form of the curve is assumed to be the same for positive and negative prospects, but we have a separate curve for each case (parameter γ for positive and δ for negative prospects). Finally, we can have mixed (both positive and negative) prospects. Thus, in this theory risk aversion and risk seeking are determined jointly by the value function and by the subjective probabilities, while in expected utility theory, risk aversion and risk seeking are determined solely by the utility function.

4.3 Suggestions towards a new model

Adjustments of the CPT model are proposed in this section, in order to expand the analytic power of the model without losing any of its useful properties. CPT carries many behavioral features and the proposed alterations aim to rather relax and broaden than particularize the specifications of the model. Notions from the State-Contingent framework are particularly useful for the development of a robust framing process and the resulting formula reveals a relation to earlier versions of Expected Utility.

Following the CPT formulation of equations (4.3)-(4.5), but with no distinction between gains and losses, the suggested model will calculate uncertain prospects as:

$$V(f) = \sum_{i=-m}^{n} \pi_i v(x_i) \tag{4.15}$$

This formulation is combining features from several models, without explicitly identifying with a specific existent model:

- If π_i expresses probability, then this is a form of Expected Utility. However, π_i here expresses a transformation of probability, which aims to measure uncertainty instead.

- The tranformation of probability along with the value function specifications follow the CPT approach, but they are more relaxed and based on foundational economic theory rather than behavioral assumptions.

- The weighting measure of probability follows the framework of rank-dependent models and Generalized EU (Quiggin 1993), but it is an objective transformation, opposedly to subjective models.

The model's specifications are described in following sections, accompanied by comments comparative to other models, especially CPT, whose results have been widely accepted in literature.

4.3.1 Objectivity of probabilities

A key feature of CPT is the subjective transformation of objective probabilities. As mentioned earlier, the inverse-s-shaped cumulative probability-weighting function satisfies the Allais paradox, but this feature is taken from Quiggin's (1982) rank-dependent framework and it could be used through his alternative of Generalized Expected Utility Theory (Quiggin 1993). CPT has a disadvantage versus rank-dependent models, because it satisfies Stochastic Dominance only for all-positive or all-negative prospects. CPT uses a different cumulative weighting function for positive and negative prospects, so mixed prospects do not lie under the same cumulative and the sum of their probabilities may not equal to unity. However, CPT seems to be preferred to rank-dependent models, probably because the mixed-prospects problem can be avoided[13] and the properties of CPT value function are important. Finally, both CPT and rank-dependent models (as all subjective probability models) have the drawback of assuming agent-specified probability transformations, without robust theoretical support on why agents may present probability preferences on top of utility preferences.

The proposed solution to this problem is an objective probability transformation, that results in an inverse-s-shaped cumulative probability weighting function. This can be done if we consider that all probabilities do not bear the same value, because they express a measure of uncertainty rather than probability itself. This is easily comprehended in the extremes; for the probability values of $p = 0$ and $p = 1$, $p \in [0, 1]$, agents are absolutely certain about the outcome, hence uncertainty is zero. Likewise, uncertainty is maximized for $p = 0.5$, because then the assigned event is equally probable to be realized or not.

[13] If we take as reference point the best (worst) of available prospects, then all other prospects will be considered negative (positive) to the reference point.

probability	uncertainty
100%	0%
50%	100%
0%	0%

Table 4.1: *Probability translated into uncertainty; probability extremes express absolute certainty, and absolute uncertainty in the middle.*

Then, the inverse-s-shaped cumulative probability-weighting function would simply be a cumulative function of uncertainty measurement.

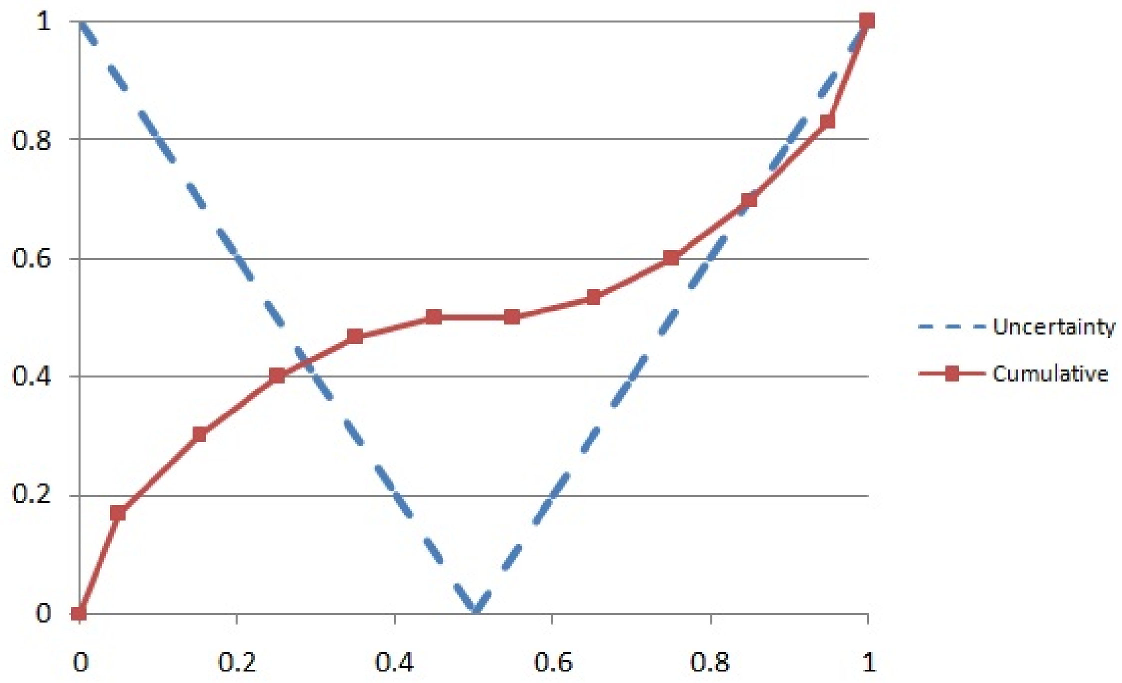

Figure 4.5: *Probabilities tranlsated into levels of uncertainty produce a cumulative distribution with inverse-s-shape.*

Important comments and results are:

i) Objectivity of probabilities: If we can choose a specific function for uncertainty measurment, then we can consider it an objective transformation and assign all the weight of risk aversion on utility bias only. Any convex uncertainty function would lead to the desired inverse-s-shaped cumulative and discussion can be made on whether there are better alternatives than figure 4.5, but it should be based on objectivity arguments rather than preference parametrization, as done in subjective rank-dependent models. Thus we can support the results of latest models, but also find a connection with probability objectivity of EU models.

ii) Stochastic dominance: The proposed cumulative, as an objective one, will be identical for positive and negative prospects, thus satisfying the Stochastic Dominance property. In this case Kahneman and Tversky (1992) show that CPT reduces to a general form of rank-dependent model, but the proposed suggestions aim to a model even wider than that.

iii) Connection with utility: If instead of a convex uncertainty value we observe a concave utility function, then the cumulative will not produce an inverse-s but a regular-s-shaped function, as in figure 4.6. The actual form of utility function is discussed in the following section, but an important comment here is that we can connect the utility domain with the uncertainty domain using the same procedure of valuation.

iv) No reference point needed: Since positive and negative prospects face the same probability weights, there is no need for a reference point to distinguish gains from losses, and it could be used only descriptively in the phraming phase.

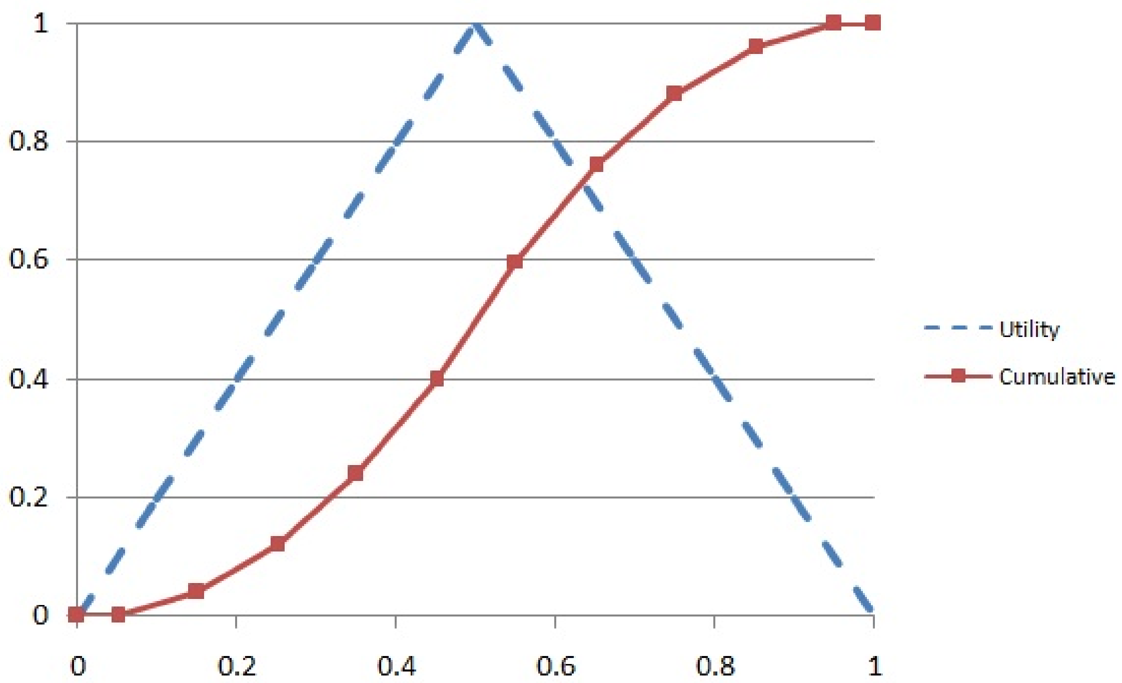

Figure 4.6: *The cumulative of a concave utility function produces a regular-s-shape function.*

4.3.2 Relaxing the assumptions on utility

CPT uses a value (utility) function in the form of figure 4.2. It is an s-shaped function around a reference point separating gains from losses, so that it presents risk aversion as we move away from the reference level. Moreover, it is steeper for losses so as to present loss aversion. As shown above, an s-shaped value function can be produced as the cumulative of a concave marginal utility, and with a twist on the choice of reference level we can have a function with the same and extended properties of CPT; instead of an abstract zero-level reference point we choose one of the points of the value function. Hence, the "framing" notion of Kahneman and Tversky (1979, 1992) becomes an actual framing of the value function.

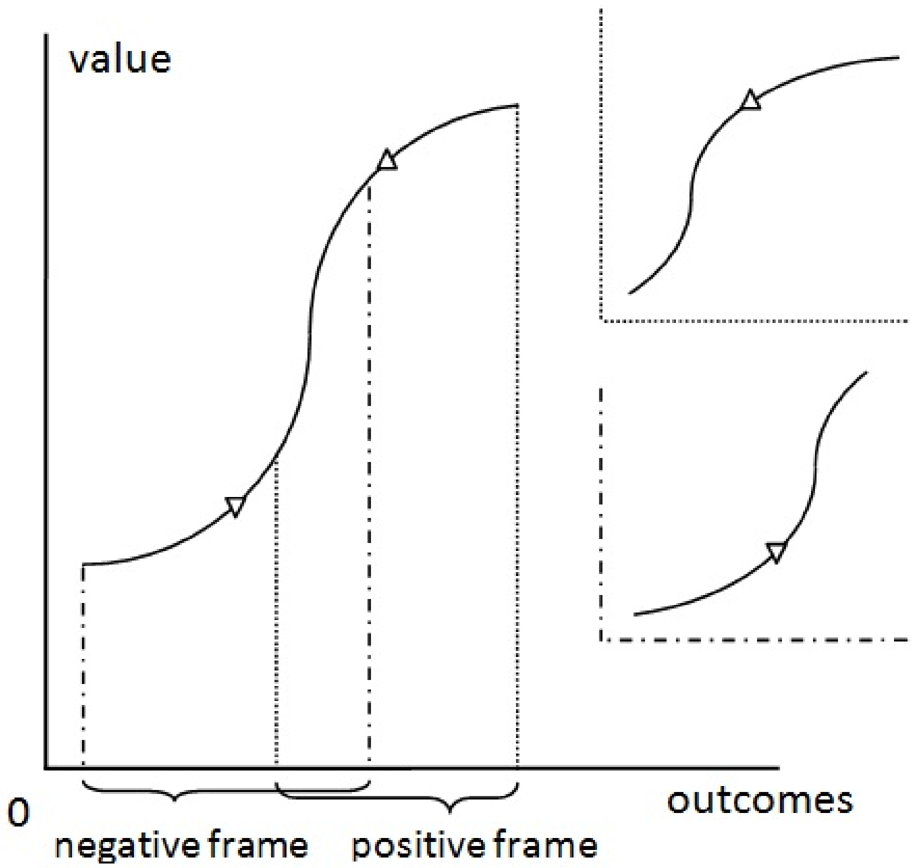

Figure 4.7: *Focusing on positive or negative prospects produces different risk-aversion and loss-aversion properties. Triangles represent optimistic and pessimistic reference points.*

This concept produces important properties:

i) Less assumptions, more alternatives: Following this approach requires less behavioral assumptions and it brings us back to the basic framework of classic economic theory. Moreover, it supports both cases of risk-averse and risk-loving agents without changing the basic structure, while CPT assumes that risk-aversion is ubiquitous and is forced to adjust this behavior through parameterization. A prominent experimental result of risk-aversion could be explained as an endowment effect, which would move the reference point upwards on the value function so that ownership or getting accustomed to a situation makes it more valuable or comfortable.

ii) Improved framing methodology: In CPT the choice of reference point which happens in the "framing phase" is not formally established. Here the "frame" is an actual frame of prospects, which can vary depending on probability and preference attributes. In a marginal case, assume that an agent has "nothing to lose", translated as no owned positive prospects, so his frame and reference point collapses to the lower-left point of the value function. This person would definitely express a risk-loving behavior, contrary to CPT assumptions, while loss-aversion would not exist. Finally, as mentioned in the previous section, since gains and losses face the same structure, the reference point can be used only descriptively, as a notion of a frame's center.

iii) Versatile utility formulation: Relaxing the behavioral assumptions of Kahneman and Tversky (1992) allows for various preference specifications. Instead of "guessing" a fully specified cumulative value function, an identification of critical points (peaks) in marginal utility and their levels leads to a cumulative with consistent properties. Moreover, the levels of marginal value in each critical point can be identified comparably, requiring less information. In figure 4.8 the two peaks have equal maximum value, which could be enough information to depict the cumulative without accurate measurements. Moreover, in the same figure the value's range is normalized, $v \in [0, 1]$, which makes comparable evaluation of events easier and similar to probability weighting.

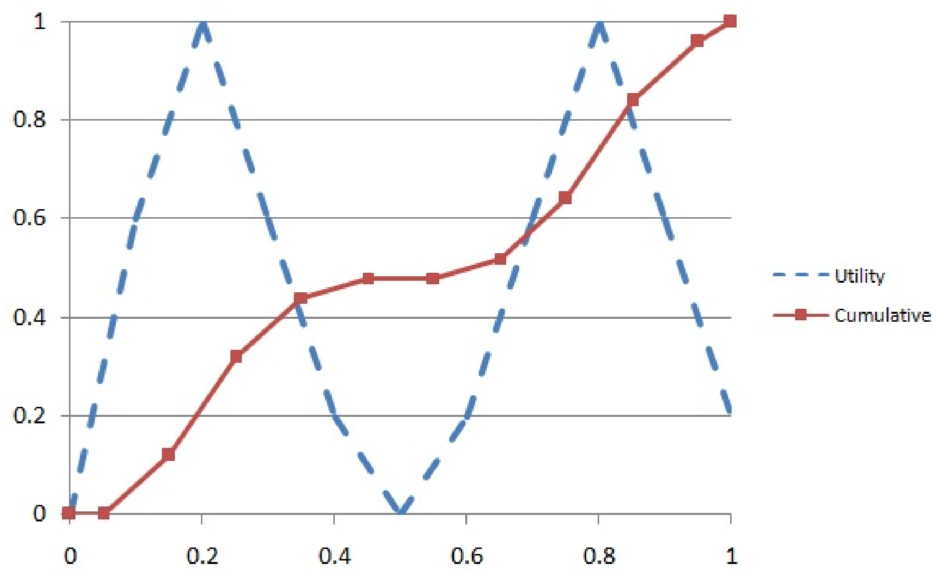

Figure 4.8: *A two-peak marginal utility results in a "double-s" cumulative. An improbable second peak may create an "uncertainty trap" between peaks.*

Figure 4.8 also makes a good example on the importance of the framing phase. A frame of options that barely includes the second peak as a probable event, could lead to choosing the first peak due to risk-aversion, although the gap between peaks could provide valuable probable events. We can call this an uncertainty trap, where small probability change on critical events may have a significant overall effect on decisions under uncertainty.

4.3.3 The State-Contingent background and extended results

Kahneman and Tversky (1992, p.300) make a description of how states of uncertainty and events are combined to represent a basic CPT uncertain prospect. It is exactly the same the description of state-connected events that we see in the State-Contingent approach developed by Chambers and Quiggin (2000). Yet, this resemblance is not surprising; an examining look on models of decisions under uncertainty shows that their vast majority is characterized by such a formulation of uncertain prospects. The fact that the SC framework was constructed on this prevalent principle using minimal axiomatic assumptions makes it a common analytical origin of these models, and approaches like CPT a special case that uses extended specifications. Some interesting results arise if we review these models from an SC aspect of basic principles.

i) Inefficiency and framing: Inefficiency, the holy grail of production analysis, is generally accepted as the suboptimal performance of an agent given a specific context of information and control (endogenous alternatives). Yet, such a behavior is contradicting the foundational economic theory's assumption of rationality, since the latter dictates by definition that an agent makes the best of the context of alternatives that he has been given. Accepting these definitions makes inefficiency a term incompatible with rationality given a certain context, whereas a context of uncertainty would then be an ideal explanation for suboptimal performance. Yet again, an agent who rationaly makes the best of a given context, even with incomplete information which means that he may take a risk, could be characterized risk-lover or risk-averse, fortunate or unfortunate by result, but definitely not inefficient by intention.

The key to explain this question lies in the conception of the state-space. An agent facing a problem, at first evaluates the context of his decision using available information, thus forming the set of states, i.e. of factors affecting his decision. Most sensibly he would not include factors irrelevant to his decision in this evaluation, because it would absorb resources that could be used in the decision process. A favorable context would include available events of the most profitable outcomes the agent can imagine, but what if the agent faces a context restricted to a small part of his aspirations? Are there any specific conditions that decide when the state-space is complete, or is it up to the agent's discretion to set his own boundaries?

The CPT concept of framing can be helpfully combined with the SC approach to provide an explanation, especially through the proposed model of this chapter. Decision-making can be thought as a two-step process, with the second step being the arrival to a decision regarding the context. Then, the first step acts as a "decision before the decision" on whether the context is conclusive or it should be revised before proceeding to action. If we want to preserve objectivity of probability measurement, then it is the value function that needs to be adjusted on the range of uncertain prospects' distribution; a frugal value function should be "stretched" in order to include probable opportunities while an overambitious one should be "shrinked" to fit available options. Then inefficiency, as in general any "wrong" decision, would be explained as a decision under a mistaken context, due to difficulties of preference adjustment. For an example of false context let's imagine a person who decides to not buy a lottery ticket, but then wishes that this specific ticket would not win the lottery. Since the ticket is not bought, the result of the lottery will have no implication in the agent's well-being, but his inability to adjust his set of expected alternatives, i.e. delete past alternatives from present expectations, could result in such a behavior, which would be irrational for this set, but not if a lesson was learned for future decisions.

ii) Wrong or wronged: Usually models involving any type of decision analysis lead to suggestions on agents' optimal behavior, without adequately explaining the causes of suboptimal decisions. Especially models like CPT, who justify deviations from optimum through behavioral assumptions, implicitly recommend that policy rules should be imposed in order to correct individual preference anomalies. In contrast, the model proposed previously in this chapter recognizes that the imbalance between expectations and objectivity can be driven by either endogenous or exogenous leverage. Thus, efficiency given a specific state context is best achieved by controled actions, while creativity is exactly relying on the denial to conform in a commonly accepted context. The inference of this approach is that imposing restrictions on a context that is already restrictive for agents' preferences, would rather intensify than soothe observed imbalances. For example, a parent punishing his child to correct his behavior would be ineffective (if not worsening) if the child believes that exogenous pressure drove his actions, hence he feels wronged instead of wrong. On the other hand, a child that abstractedly misbehaves would react significantly to a small change of incentives. In a similar way, any punishment that is related to the identity of an individual, like demographic or racial characteristics, rather than his intentional activity, would reduce his welfare level without adjusting his preferences. Finally, difficulty of preference adjustment would explain the ineffectiveness of severe repercussions on subjects like drug use, gambling, or even obesity.

This approach should evidently prove useful in economic analysis of crime and generally illicit behavior. Here the most acclaimed model for decades comes from Becker (1968), where an agent and potential lawbreaker rationally compares the personal benefits of his illegal activity with the probable infliction of punishment. In consistence with the analysis above, Becker's model has led to the unsound proposition that it is optimal to impose the severest possible punishment (to maintain effective deterrence) at the lowest possible probability of detection (to economize on enforcement costs). Hence, a driver that neglects to put on his seatbelt regardless of a potential fine, would change his behavior if the fine encreased considerably. However, the proposed model above suggests that uncertainty of law enforcement can cause illegal activity neglecting immeasurable fines, or even potential harm as in this case, while it explains why just an annoying beeping sound that is used in cars today can have a significant change of this behavior. On the other hand, and in accordance with Becker (1968), some countries impose fines related to the offenders' wealth, so that rich individuals do not demote the value of potential punishment.

iii) Applications in tax evasion and inequality: Above findings are also supported empirically in the case of shadow economies by Kafkalas, Kalaitzidakis and Tzouvelekas (2014), that analyze the relationship between tax evasion and the two main policy instruments affecting tax compliance, namely, the announced tax rate and the share of tax revenues allocated to tax monitoring mechanisms. This article shows that changes in the level of tax collection effectiveness results in the suggestion of different policy implications. Simply increasing tax rates to cover government expenditures does not comply with welfare maximizing policies, while successful policies may improve income inequalities, sustaining, at the same time, economic growth. Connections with policy effectiveness and inequality can be found in many empirical findings, and using the aforementioned model of this thesis the explanation lies in the acceptance of the posed state-set. Hence, in the long-term, expectations of agents adjust to economic growth and rely more on their relative position in society, which would explain why wealthy societies with high levels of inequality may present higher levels of crime than poor economies with higher equality.

A \ B	conflict	cooperate
conflict	(0.2 , 0.6)	(1 , 0)
cooperate	(0 , 1)	(0.4 , 0.8)

Table 4.2: *A zero-sum prisoner-dilemma game with cost of conflict. B is more powerful in conflict than A, and each agent's choice of conflict reduces two units from total social welfare.*

In table 4.2 we see the potential results of a prisoner dilemma game, where optimal state-wise strategies of individuals lead to suboptimal social welfare. Maximum total welfare reaches 1.2 points in the mutual-cooperation result, and it is reduced by 0.2 points for every agent that chooses "conflict" instead, because it is reasonable to suppose that conflict causes damages and/or consumes resources that would have otherwise been used productively. When "conflict" meets "cooperation" the aggresive agent takes control of all welfare available, while same-decision outcomes are unequally shared in favor of agent B. The maximum welfare of each agent can reach up to 1 welfare point, which is convenient to represent a normalized range of total value. Then the value function of each (identical) agent can be illustrated by figure 4.6, which is symmetrical and covering the whole range of outcomes, so that no utility bias affects objectivity of probabilities. Still, we see that inequality situates the "weak" agent at the risk-loving part of the curve and the "strong" one on the risk-averse side.

The prisoner-dilemma game cannot result to mutual-cooperation as is, because cooperation is strictly dominated by conflict for every choice of the opponent. Hence the solutions that have been proposed ever so often, usually for the iterated version of the game, are based on assumptions on top of the original context. A convincing setting would be to replace one of the agents with a neutral uncertainty source, usually called "nature", with which the other agent would have no hope of communication or strategy inference. Then cooperation and conflict would be nothing less than optimal response to natural chance, making the conflict decision strictly dominant. Having an opponent with the slightest consciousness about the game's structure, gives hope for a solution out of the original context, but as such, it will be a risky decision, thus accepted only by the the weak and risk-loving player. Even worse, if inequality in the mutual-cooperation case lowers the weak player's otucome too much, then neither him would be willing to risk for the socially optimal. This example shows how severe social imbalances can push away from social optimum, leading to destructive conditions like war and crime, or inability to cooperate on ecumenical problems as for example environmental issues.

4.4 Extended application on tax evasion

The analysis of Kafkalas, Kalaitzidakis and Tzouvelekas (2014), confirming the findings of the proposed approach, is following an independent route of an endogenous growth model. The structure of the model adheres to Roubini and Sala-i-Martin (1995), and it is calibrated using data on tax evasion from 35 OECD and 110 non-OECD countries for 2011. Standard endogenous growth models suggest that the rate at which physical capital is accumulated increases with their private return and, hence, high tax rates on income or corporate profits are typically associated with low growth rates (Lucas, 1988; Rebelo, 1991). However, taxation generates resources to finance the supply of the productive inputs provided by the government including public goods and infrastructure. Since individuals are not charged by their use of these public goods, government spending plays the role of an externality for the private sector. Such an externality ends up being an engine of endogenous growth since the resulting aggregate production function could display a high marginal productivity of private capital, which permits perpetual capital accumulation (Barro, 1990; Turnovsky, 1997). Therefore, there is a tension between the role of taxation in creating disincentives for the accumulation of capital and the role of the public spending financed by these taxes in raising the return from private capital.

4.4.1 The model

The model considers a closed economy populated by N identical agents who produce a single aggregate commodity (Y). Further, it is assumed that there is no population growth and that the labor force is equal to the population, with labor supplied inelastically. Accordingly the ith representative firm produces its output (Y_i) using the following CobbDouglas production technology:

$$Y_i = AK_i^{\alpha}\left(\frac{K_g}{L}L_i\right)^{(1-\alpha)} \tag{4.16}$$

where $0 < \alpha < 1$ is the output elasticity of private capital, A is a technological parameter, Ki denotes the stock of private capital for firm i, L_i the labor used by the representative firm, K_g is the aggregate stock of public capital, and L is the total labor force. Therefore, each individual firm benefits from an increase in economy-wide labor productivity (K_g/L) triggered by a rise in the stock of public capital.

The difference between the announced and the effective tax rate is the tax evasion rate ($\tau - \tau_e$) which, following Roubini and Sala-i-Martin (1995), is assumed to be a negative function of government expenditure allocated to tax monitoring, and a positive function of the announced tax rate. Public expenditures for improving the technology and, thus, the efficiency of the tax collection mechanism may improve the ability of tax authorities to detect tax evaders and control tax evasion. On the other hand, the incentive for tax compliance may decrease as the announced tax rate increases because, for a given state of tax monitoring, the marginal benefit of tax evasion increases. The structure of the model reveals that both the announced tax rate and the share of tax monitoring expenses impact the long-run growth rate of the economy.

4.4.2 Growth-maximizing policies

The determination of the growth-maximizing policies is achieved in two steps: first, the planner determines the growth maximizing steady-state statutory tax rate for a given allocation of government expenditure, and then derives the growth-maximizing steady-state share of tax monitoring expenditure at the given optimal tax rate. In our framework, taxation affects the growth of the economy through two channels. While taxation affects negatively the marginal product of private capital as it absorbs resources from the private sector of the economy, government expenditure for public capital formation, collected through tax revenues, increases the productivity of labor. At low values of τ, the positive effect of government expenditure dominates, and therefore the growth rate of the economy rises with the announced tax rate. At higher tax rates, the negative effect of taxation eventually dominates, and the growth rate declines as τ further rises. The statutory tax rate that maximizes the growth rate of the economy is the one that equates the marginal cost of government expenditure to its marginal benefit. The results is that when tax monitoring expenditure is proportional to total income rather than to total tax revenues, the growth-maximizing effective tax rate is greater than the output elasticity of public capital. When tax revenues are allocated proportionally among tax monitoring and public capital formation, an increase in the tax revenues by one dollar will raise government expenditure for public capital formation by less than a dollar. However, when the tax monitoring expenditure is a constant share of output, the whole increase in the tax revenues is allocated exclusively for public capital formation. In the latter case the marginal benefit of an increase in the effective tax rate is greater than in the former case, leading to a higher growth-maximizing effective tax rate.

4.4.3 Model simulation

For the simulation we specify a bilateral tax evasion function, estimated econometrically, of the following form:

$$ln\, h_i = ln\, \beta_0 + \beta_g\, lnGE_i + \beta_\tau\, lnRGDP_i + \beta_{\tau j}\, ln\tau_i + \beta_{\mu j}\, ln\mu_i + \epsilon_i \qquad (4.17)$$

where i denotes countries, $j = 1, 2$ the two groups of countries (OECD and non-OECD countries) defined in the bilateral structure of tax evasion function, h is the tax evasion expressed as the share of tax revenues that are evaded, GE is an index capturing perceptions on the quality of regulatory framework and tax auditing mechanism, RGDP is the real per capita GDP, τ is the announced tax rate by the government, μ is the share of tax revenues that goes for monitoring tax compliance, ϵ_i depicts a symmetric and normally distributed error term and measurement errors in the dependent variable, and $\beta_j^\tau = \beta^\tau D_j$ and $\beta_j^\mu = \beta^\mu D_j$ are the bilateral coefficients with $D_j = 1$ for country belonging to group j and $D_j = 0$ otherwise.

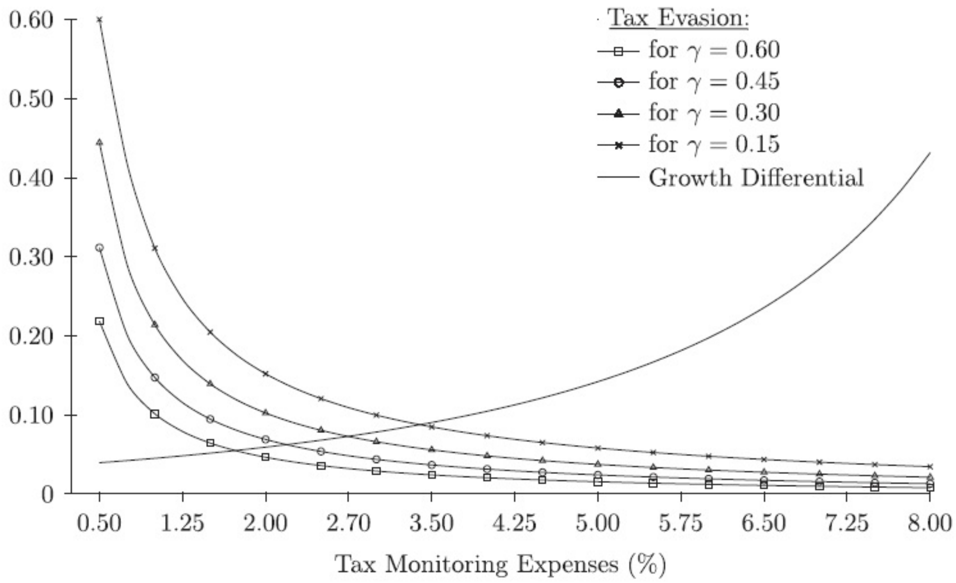

Figure 4.9: *Optimal share of monitoring expenses under different relative weights factors of tax evasion in OECD countries.*

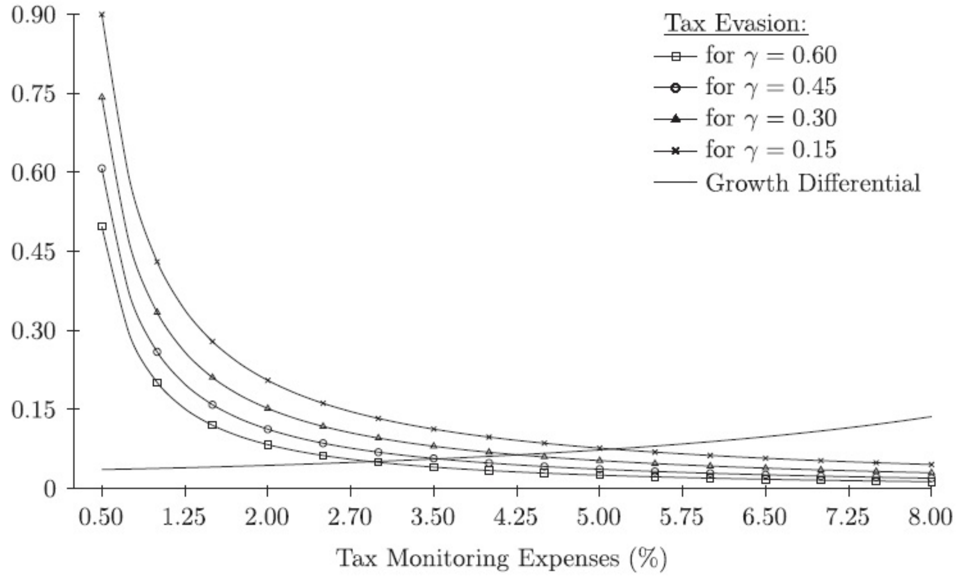

Figure 4.10: *Optimal share of monitoring expenses under different relative weights factors of tax evasion in non-OECD countries.*

4.4.4 Concluding remarks

The model confirms Barro's (1990) theoretical finding, posing that the government sets the effective tax rate close to its degree of expenditure externality. In the presence of tax evasion the statutory tax rate, has to be such that the effective one is equal to the output elasticity of public capital. The contradiction with parts of the literature is due to the definition of tax auditing expenses in government's budget constraint. If tax monitoring expenses are a constant share of total income then the optimal tax rate should be greater than the governments' externality. However, if tax auditing expenses are defined as a constant share of tax revenues, Barro's (1990) outcome is confirmed. In both cases though, the optimal reaction of government involves the reduction of tax auditing expenses and an increase in the announced tax rate for the effective has tax rate to remain at it's optimal level.

As also noted by Roubini and Sala-i-Martin (1995), governments do care about the extent of fiscal corruption as this is captured by tax evasion and therefore the formal tax rate cannot be higher than a certain threshold. In this case an optimal share of tax monitoring expenses exists since, on the one hand, tax evasion matters inducing fiscal corruption but, on the other hand, the governments' externality is lessened. Based on this assertion an infinite lifetime welfare function for a social-planner type of government is defined and optimized with respect to both the announced tax rate and the share of tax revenues absorbed by tax auditing. However, when the government is a revenue maximizing Leviathan diverting taxes for its own selfish purposes effective tax rate is higher than the elasticity of public capital. The results from calibration suggest that both tax evasion and output growth are decreasing with the share of tax revenues allocated to monitoring expenses. Tax auditing is less effective at low levels of tax evasion, while its negative effect on aggregate output growth is high. At the same time monitoring expenses are reducing the announced tax rate, particularly at high levels of statutory tax rates. Welfare maximizing policies imply an announced tax rate close to the elasticity of public capital and a share of monitoring expenses between 1.70-3.40% for the OECD countries and 2.90-5.20% for the non-OECD countries assuming different weights on the relative importance of tax evasion.

Chapter 5

Appendix

5.1 Tax-evasion model's results

Variable definition	Mean	Max	Min
OECD countries			
Tax evasion (in %)[a]	6.42	11.64	1.19
Announced tax rate (in %)[a]	34.36	49.01	6.60
Monitoring expenses as % of government spendings[b]	12.19	17.61	2.30
Government effectiveness[c]	0.767	0.998	0.429
Real GDP per capita (at constant 2007 US$)[d]	30,185	75,588	10,438
Countries in the sample		35	
non – OECD countries			
Tax evasion (in %)[a]	7.01	19.23	1.11
Announced tax rate (in %)[a]	18.18	63.10	0.91
Monitoring expenses as % of government spendings[b]	6.23	17.59	1.51
Government effectiveness[c]	0.369	0.995	0.025
Real GDP per capita (at constant 2007 US$)[d]	9141	136,248	241
Countries in the sample		110	

Parameter estimates of the bilateral tax evasion function

Variable	Parameter	Estimate	Std Error[5]
Constant	β_0	−0.0449	0.0032*
Government effectiveness	β_g	−0.1359	0.0641**
Real GDP per capita	β_r	−0.0192	0.0109**
OECD countries			
Announced tax rate	$\beta_{\tau o}$	0.9026	0.1204**
Tax monitoring expenses	$\beta_{\mu o}$	−0.1230	0.0715**
non – OECD countries			
Announced tax rate	$\beta_{\tau d}$	1.1087	0.0485*
Tax monitoring expenses	$\beta_{\mu d}$	−0.1994	0.0629*
$\overline{R}^2$	0.7509		

[a] Obtained from *Tax Justice Network*.
[b] Constructed from *Global Development Network Growth Database*.
[c] Obtained from *World Bank: Worldwide Governance Indicators*.
[d] Obtained from *Penn World Tables*.
* Indicates statistical significance at the 1 per cent level.
** Indicates statistical significance at the (5) per cent level.

Table 5.1: *Summary statistics of the variables and parameter estimates of the bilateral tax evasion function.*

Monitoring expenses (μ)	Announced tax rate (τ)	Tax evasion rate ($\tau-\tau_e$)	Output growth rate (g_y)	Changes in growth rates	Changes in tax evasion			
					$\gamma=0.15$	$\gamma=0.30$	$\gamma=0.45$	$\gamma=0.60$
0.50	43.74	9.41	2.98	0.0397	0.6332	0.4441	0.3116	0.2185
0.75	42.75	8.76	2.97	0.0423	0.4177	0.2899	0.2012	0.1397
1.00	41.93	8.31	2.96	0.0452	0.3108	0.2140	0.1474	0.1015
1.25	41.21	7.96	2.95	0.0484	0.2470	0.1690	0.1156	0.0791
1.50	40.54	7.67	2.94	0.0518	0.2047	0.1393	0.0948	0.0645
1.75	39.91	7.42	2.92	0.0554	0.1746	0.1182	0.0800	0.0542
2.00	39.29	7.20	2.91	0.0593	0.1521	0.1025	0.0691	0.0465
2.25	38.69	7.00	2.90	0.0636	0.1346	0.0903	0.0606	0.0407
2.50	38.10	6.81	2.88	0.0681	0.1206	0.0806	0.0539	0.0360
2.75	37.51	6.64	2.86	0.0731	0.1093	0.0727	0.0484	0.0322
3.00	36.92	6.47	2.85	0.0784	0.0998	0.0662	0.0439	0.0291
3.25	36.33	6.32	2.83	0.0842	0.0918	0.0606	0.0401	0.0265
3.50	35.74	6.17	2.81	0.0905	0.0849	0.0559	0.0368	0.0242
3.75	35.15	6.03	2.79	0.0973	0.0790	0.0518	0.0340	0.0223
4.00	34.55	5.89	2.76	0.1047	0.0738	0.0482	0.0315	0.0206
4.25	33.95	5.75	2.74	0.1128	0.0692	0.0451	0.0294	0.0191
4.50	33.35	5.62	2.71	0.1217	0.0651	0.0423	0.0275	0.0178
4.75	32.73	5.49	2.69	0.1314	0.0615	0.0398	0.0257	0.0167
5.00	32.11	5.36	2.66	0.1421	0.0582	0.0375	0.0242	0.0156
5.25	31.48	5.24	2.63	0.1539	0.0552	0.0355	0.0228	0.0146
5.50	30.85	5.11	2.60	0.1669	0.0525	0.0336	0.0215	0.0138
5.75	30.20	4.99	2.56	0.1814	0.0501	0.0319	0.0204	0.0130
6.00	29.55	4.86	2.53	0.1975	0.0478	0.0304	0.0193	0.0123
6.25	28.88	4.74	2.49	0.2155	0.0457	0.0289	0.0183	0.0116
6.50	28.21	4.62	2.45	0.2357	0.0438	0.0276	0.0174	0.0110
6.75	27.52	4.50	2.40	0.2585	0.0420	0.0264	0.0166	0.0104
7.00	26.83	4.37	2.35	0.2843	0.0403	0.0252	0.0158	0.0099
7.25	26.12	4.25	2.30	0.3138	0.0388	0.0241	0.0150	0.0094
7.50	25.40	4.13	2.25	0.3475	0.0373	0.0231	0.0143	0.0089
7.75	24.66	4.00	2.19	0.3864	0.0359	0.0222	0.0137	0.0084
8.00	23.92	3.88	2.16	0.4316	0.0346	0.0213	0.0131	0.0080

Table 5.2: *Equilibrium values under different share of monitoring expenses and relative weight factor of tax evasion in OECD countries.*

Monitoring expenses (μ)	Announced tax rate (τ)	Tax evasion rate ($\tau-\tau_e$)	Output growth rate (g_y)	Changes in growth rates	Changes in tax evasion			
					$\gamma=0.15$	$\gamma=0.30$	$\gamma=0.45$	$\gamma=0.60$
0.50	46.10	26.29	1.99	0.0360	0.9074	0.7426	0.6077	0.4974
0.75	40.93	21.25	1.99	0.0371	0.5859	0.4645	0.3682	0.2919
1.00	38.04	18.50	1.98	0.0382	0.4304	0.3342	0.2594	0.2014
1.25	36.08	16.69	1.98	0.0395	0.3390	0.2592	0.1981	0.1515
1.50	34.61	15.37	1.97	0.0409	0.2791	0.2107	0.1591	0.1201
1.75	33.42	14.34	1.97	0.0424	0.2367	0.1769	0.1322	0.0988
2.00	32.43	13.50	1.96	0.0440	0.2053	0.1520	0.1126	0.0834
2.25	31.56	12.80	1.96	0.0457	0.1810	0.1330	0.0977	0.0718
2.50	30.79	12.19	1.95	0.0475	0.1617	0.1179	0.0860	0.0627
2.75	30.09	11.66	1.94	0.0495	0.1460	0.1058	0.0767	0.0555
3.00	29.45	11.19	1.94	0.0515	0.1330	0.0958	0.0690	0.0497
3.25	28.85	10.76	1.93	0.0537	0.1221	0.0874	0.0626	0.0448
3.50	28.28	10.38	1.92	0.0560	0.1127	0.0803	0.0571	0.0407
3.75	27.74	10.02	1.92	0.0585	0.1047	0.0741	0.0525	0.0372
4.00	27.22	9.69	1.91	0.0611	0.0976	0.0688	0.0485	0.0342
4.25	26.73	9.38	1.90	0.0639	0.0915	0.0641	0.0450	0.0315
4.50	26.25	9.09	1.89	0.0668	0.0860	0.0600	0.0419	0.0292
4.75	25.78	8.81	1.89	0.0699	0.0811	0.0563	0.0391	0.0272
5.00	25.32	8.55	1.88	0.0733	0.0767	0.0530	0.0367	0.0254
5.25	24.88	8.30	1.87	0.0768	0.0727	0.0500	0.0345	0.0237
5.50	24.44	8.06	1.86	0.0806	0.0691	0.0474	0.0325	0.0223
5.75	24.01	7.84	1.85	0.0846	0.0658	0.0449	0.0307	0.0209
6.00	23.58	7.62	1.84	0.0889	0.0628	0.0427	0.0290	0.0197
6.25	23.16	7.41	1.83	0.0935	0.0600	0.0406	0.0275	0.0186
6.50	22.74	7.20	1.82	0.0984	0.0575	0.0387	0.0261	0.0176
6.75	22.33	7.00	1.81	0.1036	0.0551	0.0370	0.0248	0.0167
7.00	21.91	6.81	1.80	0.1093	0.0529	0.0354	0.0236	0.0158
7.25	21.50	6.62	1.78	0.1153	0.0509	0.0339	0.0225	0.0150
7.50	21.09	6.44	1.77	0.1218	0.0490	0.0325	0.0215	0.0143
7.75	20.69	6.26	1.76	0.1289	0.0472	0.0312	0.0206	0.0136
8.00	20.28	6.08	1.74	0.1364	0.0455	0.0299	0.0197	0.0129

Table 5.3: *Equilibrium values under different share of monitoring expenses and relative weight factor of tax evasion in non-OECD countries.*

5.2 Matlab code

5.2.1 The divide function

```
function MM = DivideFunction(M,W,F,Fv,N,No)
if W==1
    MM = M(M(:,F)<=Fv,:);
elseif W==2;
    MM = M(M(:,F)==Fv,:);
elseif W==3
    M = sortrows(M,F);
    SepVec = round(size(M,1)/N)*ones(1,N-1);
    SepVec(1,N)  = size(M,1)-SepVec(1)*(N-1);
    Mc = mat2cell(M, SepVec, size(M,2));
    MM = Mc{No};
elseif W==4
    step =  (max(M(:,F))-min(M(:,F)))/N;
    start = min(M(:,F))+(No-1)*step;
    if No<N
        MM = M(M(:,F)>=start & M(:,F)<(start+step),:);
    elseif No==N
        MM = M(M(:,F)>=start & M(:,F)<=max(M(:,F)),:);
    else
        error('Number of group No is not in N')
    end
else
    error('Inappropriate value inserted: W takes values 1 to 4')
end
```

5.2.2 The DEA function

```
function result = DEAfunctionAll(D,XX,YY,Xeq,Yeq,MM,Meq,rts,zerozero,hyper)
k = size(YY,2);
for i=1:k; % k No of columns of Y horizontal (column id), to take each element for DEA
    if hyper==0
        A = [[D*YY(:,i);zeros(size(XX,1),1)],MM];
        B = [zeros(size(YY,1),1);D*XX(:,i)];
        Aeq = [];
        Beq = [];
        if rts==2
            Aeq(size(Aeq,1)+1,:) = [0,ones(1,size(MM,2))];
            Beq(size(Beq,1)+1,:) = 1;
        end

        if zerozero==1
            A(size(A,1)+1,:) = zeros(1,size(A,2));
            B(size(B,1)+1,:) = 0;
        end
        f = [-D,zeros(1,size(A,2)-1)];
        lb = zeros(size(A,2),1);
        ub = Inf*ones(size(A,2),1);
        x0 = XX(:,i);    % ignored by Simplex method
        options =
optimset('LargeScale','off','Simplex','on','MaxIter',2500,'TolFun',1.00e-
008,'TolX',1.00e-008,'FunValCheck','on');
        [x,fval,exitflag] = linprog(f,A,B,Aeq,Beq,lb,ub,x0,options);
        result(i,:) = [1/x(1),exitflag];
    elseif hyper==1
        Yopt=D*max(D*-MM(1:size(YY,1),:),[],2);
        Xopt=D*min(D*MM(size(YY,1)+1:size(MM,1),:),[],2);
        XYopt=[Yopt;Xopt];
        Ywho=D*YY(:,i)<D*Yopt; % Y<max, X>min
        if ((sum(Ywho)>0 & sum(Ywho)<size(Ywho,1)) | sum(YY(:,i)==Yopt)>0)==1;
            MM2=[];
            for h=1:size(MM,2); %"for" needs horizontal
                MM2(:,h)=abs(MM(1:size(YY,1),h))==Yopt(:,1);
            end
            MM22=sum(MM2);
            MM2=MM(:,MM22>0)';
            MM3=[];
            MM3pd=[];
            for j=1:size(MM2,1);
                MM3(j,:)=MM2(j,:)./(min(MM2,[],1)); % min= min inp and max -out
                MM3pd(1,j)=pdist2(MM3(j,:),[YY(:,i);XX(:,i)]'./abs(min(MM2,[],1)))';
                Yopt2=MM2(MM3pd==min(MM3pd),:)';
                Yopt2=Yopt2(:,1);
            end
            ratio=Yopt2./[-YY(:,i);XX(:,i)];
            result(i,:)=[1/mean(ratio(1:size(YY,1),1))^(D),4];
        else
            YYz=YY(:,i)
            ratioY = abs(YYz./Yopt-1); % ratio closest to 1, under or over 1
            diff=YYz-Yopt;
            a=diff./diff(ratioY==min(ratioY)); % coefficient a
            b=YYz-a.*YYz(ratioY==min(ratioY))
            YYz=YYz-b
            MMz=MM+[b;zeros(size(XX,1),1)]*ones(1,size(MM,2));
            A = [[D*YYz;zeros(size(XX,1),1)],MMz];
            B = [zeros(size(YY,1),1);D*XX(:,i)];
            Aeq = [];
```

```
            Beq = [];
            if rts==2
                Aeq(size(Aeq,1)+1,:) = [0,ones(1,size(MM,2))];
                Beq(size(Beq,1)+1,:) = 1;
            end
            if zerozero==1
                A(size(A,1)+1,:) = zeros(1,size(A,2));
                B(size(B,1)+1,:) = 0;
            end
            f = [-D,zeros(1,size(A,2)-1)];
            lb = zeros(size(A,2),1);
            ub = Inf*ones(size(A,2),1);
            x0 = XX(:,i);   % ignored by Simplex method
            options =
optimset('LargeScale','off','Simplex','on','MaxIter',2500,'TolFun',1.00e-
008,'TolX',1.00e-008,'FunValCheck','on');
            [x,fval,exitflag] = linprog(f,A,B,Aeq,Beq,lb,ub,x0,options);
            x=mean(x(1).*(YYz./(YYz+b)));
            result(i,:) = [1/x,exitflag];
        end
    else
        error('"hyper" takes values 0 or 1')
    end
end
```

5.2.3 Overall estimation

```
clear
datafile='pestdatagr.xls';
D=-1;         % =1 for output distances, and =-1 for input distances
rts=2;         % Returns to scale: 1=CRS, 2=VRS
badin=2;    % 1:badin, 2: good out
hyper=1;    % =0 for radial DEA, and =1 for hyper-directional DEA
zerozero=0; % Include (0,..,0) to calculations, 1=yes, 0=no
inout= [0,0,1,-1,-1,-1,-1, (-1)^badin]; % -1=input, 1=output, 0=other
bad=   [0,0,0, 0, 0, 0, 0, 2-badin]; % 1=bad input or negative output,
disp=  [0,0,1, 1, 1, 1, 1, 1]; % disposability: 1=free, 2=weak,
g=[1,8];      % Group factors: factors (columns) according which to group
T=6;          % No of time periods
gn=[T,3];     % Number of separations for each factor above
gW=[2,3];     % Way of group separation
M = xlsread(datafile); % Insert excel data
M(:,bad==1) = -M(:,bad==1);
M = sortrows(M,g); % data matrix sorted (in rows) according to vector g
for gr1=1:gn(1);
    eval(['M' num2str(gr1) ' = DivideFunction(M,gW(1),g(1),gr1,0,0)']);
end
for gr1=1:gn(1);
    eval(['IND' num2str(gr1) ' = ctranspose(M' num2str(gr1) '(:,1:2))']);
    eval(['X' num2str(gr1) '   = ctranspose(M' num2str(gr1) '(:,(inout==-
D)&(disp==1)))']);
    eval(['Y' num2str(gr1) '   = ctranspose(M' num2str(gr1)
'(:,(inout==D)&(disp==1)))']);
    eval(['XEQ' num2str(gr1) ' = ctranspose(M' num2str(gr1) '(:,(inout==-
D)&(disp==2)))']);
    eval(['YEQ' num2str(gr1) ' = ctranspose(M' num2str(gr1)
'(:,(inout==D)&(disp==2)))']);
    eval(['X' num2str(gr1) ' = [IND' num2str(gr1) ';X' num2str(gr1) ']']);
    eval(['Y' num2str(gr1) ' = [IND' num2str(gr1) ';Y' num2str(gr1) ']']);
    eval(['XEQ' num2str(gr1) ' = [IND' num2str(gr1) ';XEQ' num2str(gr1) ']']);
    eval(['YEQ' num2str(gr1) ' = [IND' num2str(gr1) ';YEQ' num2str(gr1) ']']);

    eval(['X' num2str(gr1) ' = ctranspose(sortrows(ctranspose(X' num2str(gr1)
'),2))']);
    eval(['Y' num2str(gr1) ' = ctranspose(sortrows(ctranspose(Y' num2str(gr1)
'),2))']);
    eval(['XEQ' num2str(gr1) ' = ctranspose(sortrows(ctranspose(XEQ' num2str(gr1)
'),2))']);
    eval(['YEQ' num2str(gr1) ' = ctranspose(sortrows(ctranspose(YEQ' num2str(gr1)
'),2))']);

    %4th, take sorted index and transpose it (make it column).
    eval(['IND' num2str(gr1) ' = ctranspose(X' num2str(gr1) '(1:2,:))']);

    %and 5th, remove index from Xs and Ys, if they are not empty
    if eval(['size(X' num2str(gr1) ',2)>0']);
```

```
        eval(['X' num2str(gr1) ' = X' num2str(gr1) '(3:size(X' num2str(gr1)
',1),:)']);
        eval(['Y' num2str(gr1) ' = Y' num2str(gr1) '(3:size(Y' num2str(gr1)
',1),:)']);
    end
    if eval(['size(XEQ' num2str(gr1) ',2)>0']);
        eval(['XEQ' num2str(gr1) ' = XEQ' num2str(gr1) '(3:size(XEQ' num2str(gr1)
',1),:)']);
        eval(['YEQ' num2str(gr1) ' = YEQ' num2str(gr1) '(3:size(YEQ' num2str(gr1)
',1),:)']);
    end
    eval(['AA' num2str(gr1) ' = [-D*Y' num2str(gr1) '; D*X' num2str(gr1) ']' ]);
    eval(['AAEQ' num2str(gr1) ' = [-D*YEQ' num2str(gr1) '; D*XEQ' num2str(gr1)
']' ]);
end
if badin==1
    colin=5;    % column of pest as bad inpout
    colout=2;   % column of pest as good output
elseif badin==2
    colin=2;
    colout=5;
else
    error('badin must equal 1 or 2')
end

for gr1=2:gn(1);
    if D==1
        eval(['X01' num2str(gr1) ' = X' num2str(gr1) ]);
        eval(['X10' num2str(gr1) ' = X' num2str(gr1-1)]);
        if badin==1
            eval(['X01' num2str(gr1) '(colin,:) = X' num2str(gr1-1)
'(colin,:)']);
            eval(['X10' num2str(gr1) '(colin,:) = X' num2str(gr1) '(colin,:)']);
        end

    elseif D==-1
        eval(['Y01' num2str(gr1) ' = Y' num2str(gr1) ]);
        eval(['Y10' num2str(gr1) ' = Y' num2str(gr1-1)]);
        if badin==1
            eval(['Y01' num2str(gr1) '(colout,:) = Y' num2str(gr1-1)
'(colout,:)']);
            eval(['Y10' num2str(gr1) '(colout,:) = Y' num2str(gr1)
'(colout,:)']);
        end

    else
        error('D must equal 1 or -1')
    end
end
A00results=[];
for gr1=2:gn(1); % tech change last year 2:gn(1), next year 1:gn(1)-1
% D-ab-y: Yab=year(0=present,1=last),group(0=same,1=benchmark), y=AAyear
    eval(['D000' num2str(gr1) '= DEAfunctionAll(D,X' num2str(gr1) ',Y'
num2str(gr1) ',XEQ' num2str(gr1) ',YEQ' num2str(gr1) ',AA' num2str(gr1) ',AAEQ'
num2str(gr1) ',rts,zerozero,hyper)' ]);
```

```
    eval(['D101' num2str(gr1) '= DEAfunctionAll(D,X' num2str(gr1-1) ',Y'
num2str(gr1-1) ',XEQ' num2str(gr1-1) ',YEQ' num2str(gr1-1) ',AA' num2str(gr1-1)
',AAEQ' num2str(gr1-1) ',rts,zerozero,hyper)' ]);
    eval(['D001' num2str(gr1) '= DEAfunctionAll(D,X' num2str(gr1) ',Y'
num2str(gr1) ',XEQ' num2str(gr1) ',YEQ' num2str(gr1) ',AA' num2str(gr1-1) ',AAEQ'
num2str(gr1-1) ',rts,zerozero,hyper)' ]);
    eval(['D100' num2str(gr1) '= DEAfunctionAll(D,X' num2str(gr1-1) ',Y'
num2str(gr1-1) ',XEQ' num2str(gr1-1) ',YEQ' num2str(gr1-1) ',AA' num2str(gr1)
',AAEQ' num2str(gr1) ',rts,zerozero,hyper)' ]);

if D==1
    eval(['D010' num2str(gr1) '= DEAfunctionAll(D,X01' num2str(gr1) ',Y'
num2str(gr1) ',XEQ' num2str(gr1) ',YEQ' num2str(gr1) ',AA' num2str(gr1) ',AAEQ'
num2str(gr1) ',rts,zerozero,hyper)' ]);
    eval(['D011' num2str(gr1) '= DEAfunctionAll(D,X01' num2str(gr1) ',Y'
num2str(gr1) ',XEQ' num2str(gr1) ',YEQ' num2str(gr1) ',AA' num2str(gr1-1) ',AAEQ'
num2str(gr1-1) ',rts,zerozero,hyper)' ]);
    eval(['D110' num2str(gr1) '= DEAfunctionAll(D,X10' num2str(gr1) ',Y'
num2str(gr1) ',XEQ' num2str(gr1) ',YEQ' num2str(gr1) ',AA' num2str(gr1) ',AAEQ'
num2str(gr1) ',rts,zerozero,hyper)' ]);
    eval(['D111' num2str(gr1) '= DEAfunctionAll(D,X10' num2str(gr1) ',Y'
num2str(gr1) ',XEQ' num2str(gr1) ',YEQ' num2str(gr1) ',AA' num2str(gr1-1) ',AAEQ'
num2str(gr1-1) ',rts,zerozero,hyper)' ]);
elseif D==-1
    eval(['D010' num2str(gr1) '= DEAfunctionAll(D,X' num2str(gr1) ',Y01'
num2str(gr1) ',XEQ' num2str(gr1) ',YEQ' num2str(gr1) ',AA' num2str(gr1) ',AAEQ'
num2str(gr1) ',rts,zerozero,hyper)' ]);
    eval(['D011' num2str(gr1) '= DEAfunctionAll(D,X' num2str(gr1) ',Y01'
num2str(gr1) ',XEQ' num2str(gr1) ',YEQ' num2str(gr1) ',AA' num2str(gr1-1) ',AAEQ'
num2str(gr1-1) ',rts,zerozero,hyper)' ]);
    eval(['D110' num2str(gr1) '= DEAfunctionAll(D,X' num2str(gr1) ',Y10'
num2str(gr1) ',XEQ' num2str(gr1) ',YEQ' num2str(gr1) ',AA' num2str(gr1) ',AAEQ'
num2str(gr1) ',rts,zerozero,hyper)' ]);
    eval(['D111' num2str(gr1) '= DEAfunctionAll(D,X' num2str(gr1) ',Y10'
num2str(gr1) ',XEQ' num2str(gr1) ',YEQ' num2str(gr1) ',AA' num2str(gr1-1) ',AAEQ'
num2str(gr1-1) ',rts,zerozero,hyper)' ]);
end
    eval(['A0result' num2str(gr1) '=[]']);
    eval(['A0result' num2str(gr1) '=[IND' num2str(gr1) ',D000' num2str(gr1)
',D001' num2str(gr1) ',D100' num2str(gr1) ',D101' num2str(gr1) ',D010'
num2str(gr1) ',D011' num2str(gr1) ',D110' num2str(gr1) ',D111' num2str(gr1)
']']);
    eval(['A00results=[A00results;A0result' num2str(gr1) ']']);
end
A00results=sortrows(A00results,[2,1]);
for infcol=2:size(A00results,2)/2;
    A00results(A00results(:,infcol*2)<1,infcol*2-1)=1;
end
A00results=[ones(size(A00results,1),1)*[D,rts,badin,hyper],A00results]
filename = '0matresults.xls';
xlswrite(filename,A00results)
```

5.3 State-Contingent results

This sections presents the results of the Data Envelopment Analysis estimation in Matlab. They are presented in two column sections with a series of identifiers:

- I/O refers to "Input or Output orientation". Values of -1 and 1 indicate input and output distance functions respectively.
- C/V refers to the type of technology. Values of 1 and 2 indicate Constant and Variable Returns to scale respectively.
- The term "Bad" indicates the inclusion of the state variable as a bad input or a good output in the estimation, with the values 1 and 2 respectively.
- The indicator "H" stands for "hyper", i.e. the estimation under the hyperfeasible specification. Values of 0 and 1 indicate non-hyper and hyperfeasible specification respectively.
- Yr and Frm indicators stand for the year ans farm id of producers' realizations.
- The rest of columns present the estimated effects, T: technical change, Ω: state effect, H: heterogeneity effect (combination of T and Ω), E: efficiency score, and finally P: productivity score, derived from efficiency and heterogeneity interaction.

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
1	1	1	0	2	1	0.93560	1.00707	0.94221	0.90731	0.85488
1	1	1	0	3	1	1.11380	0.99980	1.11358	1.89145	2.10628
1	1	1	0	4	1	0.87337	1.00674	0.87926	0.70397	0.61897
1	1	1	0	5	1	1.06941	1.00752	1.07745	0.66661	0.71824
1	1	1	0	6	1	1.08095	0.99973	1.08066	1.67233	1.80722
1	1	1	0	2	2	0.93959	0.98458	0.92510	0.96363	0.89146
1	1	1	0	3	2	1.02017	0.98597	1.00586	1.67571	1.68552
1	1	1	0	4	2	0.85044	0.88272	0.75071	0.52507	0.39418
1	1	1	0	5	2	1.08209	1.00014	1.08224	1.94373	2.10358
1	1	1	0	6	2	0.82828	0.99994	0.82823	0.75296	0.62363
1	1	1	0	2	3	0.89900	0.92400	0.83067	1.89350	1.57288
1	1	1	0	3	3	1.21214	1.13522	1.37605	0.52812	0.72672
1	1	1	0	4	3	0.99900	1.00100	1.00000	1.00000	1.00000
1	1	1	0	5	3	0.98870	0.88903	0.87898	1.00000	0.87898
1	1	1	0	6	3	0.91777	0.94850	0.87051	1.00000	0.87051
1	1	1	0	2	4	1.02051	0.92543	0.94441	1.43961	1.35957
1	1	1	0	3	4	1.05960	0.99974	1.05932	0.99457	1.05357
1	1	1	0	4	4	0.85868	0.95596	0.82086	1.22511	1.00565
1	1	1	0	5	4	1.18906	1.02313	1.21657	0.73141	0.88980
1	1	1	0	6	4	0.93711	0.99375	0.93125	0.83937	0.78167
1	1	1	0	2	5	0.95319	1.02509	0.97711	2.14309	2.09403
1	1	1	0	3	5	1.10300	1.00530	1.10885	0.60238	0.66795
1	1	1	0	4	5	0.92881	0.90280	0.83853	0.73857	0.61931
1	1	1	0	5	5	0.59758	1.35188	0.80785	1.91474	1.54682
1	1	1	0	6	5	1.15482	1.00000	1.15482	0.85800	0.99083
1	1	1	0	2	6	0.98858	0.99938	0.98797	0.97516	0.96343
1	1	1	0	3	6	1.16143	1.00019	1.16165	1.12285	1.30435
1	1	1	0	4	6	0.85185	1.01388	0.86368	1.56604	1.35256
1	1	1	0	5	6	1.10268	1.00000	1.10268	0.63961	0.70529
1	1	1	0	6	6	0.80811	0.99956	0.80776	1.09891	0.88766
1	1	1	0	2	7	0.96523	1.04592	1.00955	0.99162	1.00109
1	1	1	0	3	7	0.93053	1.04255	0.97012	1.41761	1.37525

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
1	1	1	1	2	1	0.93560	1.00707	0.94221	0.90731	0.85488
1	1	1	1	3	1	1.11380	0.99980	1.11358	1.89145	2.10628
1	1	1	1	4	1	0.87337	1.00674	0.87926	0.70397	0.61897
1	1	1	1	5	1	1.06941	1.00752	1.07745	0.66661	0.71824
1	1	1	1	6	1	1.08095	0.99973	1.08066	1.67233	1.80722
1	1	1	1	2	2	0.93959	0.98458	0.92510	0.96363	0.89146
1	1	1	1	3	2	1.02017	0.98597	1.00586	1.67571	1.68552
1	1	1	1	4	2	0.85044	0.88272	0.75071	0.52507	0.39418
1	1	1	1	5	2	1.08209	1.00014	1.08224	1.94373	2.10358
1	1	1	1	6	2	0.82828	0.99994	0.82823	0.75296	0.62363
1	1	1	1	2	3	0.89900	0.92400	0.83067	1.89350	1.57288
1	1	1	1	3	3	1.21214	1.13522	1.37605	0.52812	0.72672
1	1	1	1	4	3	0.99900	1.00100	1.00000	1.00000	1.00000
1	1	1	1	5	3	0.98870	0.88903	0.87898	1.00000	0.87898
1	1	1	1	6	3	0.91777	0.94850	0.87051	1.00000	0.87051
1	1	1	1	2	4	1.02051	0.92543	0.94441	1.43961	1.35957
1	1	1	1	3	4	1.05960	0.99974	1.05932	0.99457	1.05357
1	1	1	1	4	4	0.85868	0.95596	0.82086	1.22511	1.00565
1	1	1	1	5	4	1.18906	1.02313	1.21657	0.73141	0.88980
1	1	1	1	6	4	0.93711	0.99375	0.93125	0.83937	0.78167
1	1	1	1	2	5	0.95319	1.02509	0.97711	2.14309	2.09403
1	1	1	1	3	5	1.10300	1.00530	1.10885	0.60238	0.66795
1	1	1	1	4	5	0.92881	0.90280	0.83853	0.73857	0.61931
1	1	1	1	5	5	0.59758	1.35188	0.80785	1.91474	1.54682
1	1	1	1	6	5	1.15482	1.00000	1.15482	0.85800	0.99083
1	1	1	1	2	6	0.98858	0.99938	0.98797	0.97516	0.96343
1	1	1	1	3	6	1.16143	1.00019	1.16165	1.12285	1.30435
1	1	1	1	4	6	0.85185	1.01388	0.86368	1.56604	1.35256
1	1	1	1	5	6	1.10268	1.00000	1.10268	0.63961	0.70529
1	1	1	1	6	6	0.80811	0.99956	0.80776	1.09891	0.88766
1	1	1	1	2	7	0.96523	1.04592	1.00955	0.99162	1.00109
1	1	1	1	3	7	0.93053	1.04255	0.97012	1.41761	1.37525

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
1	1	1	0	4	7	0.90723	0.99990	0.90714	0.97471	0.88420
1	1	1	0	5	7	1.10205	0.99343	1.09481	0.72372	0.79233
1	1	1	0	6	7	0.88496	1.07215	0.94881	1.65486	1.57014
1	1	1	0	2	8	0.90189	0.94657	0.85370	0.73217	0.62506
1	1	1	0	3	8	0.93909	0.94845	0.89068	1.93397	1.72255
1	1	1	0	4	8	0.85032	1.04898	0.89197	0.38184	0.34059
1	1	1	0	5	8	0.99302	1.00452	0.99751	1.28607	1.28287
1	1	1	0	6	8	1.02153	1.04004	1.06243	1.33284	1.41605
1	1	1	0	2	9	0.97445	0.99549	0.97005	2.23483	2.16791
1	1	1	0	3	9	0.97968	1.01623	0.99559	0.38873	0.38702
1	1	1	0	4	9	0.92610	0.90546	0.83855	1.00000	0.83855
1	1	1	0	5	9	1.06471	1.00008	1.06479	1.67942	1.78824
1	1	1	0	6	9	1.07187	1.16874	1.25273	0.59544	0.74593
1	1	1	0	2	10	0.97795	1.03608	1.01324	1.74067	1.76371
1	1	1	0	3	10	1.00683	0.97921	0.98590	0.57449	0.56639
1	1	1	0	4	10	0.91756	1.00000	0.91756	3.45084	3.16635
1	1	1	0	5	10	1.22815	0.99790	1.22557	0.34904	0.42778
1	1	1	0	6	10	0.68962	0.99754	0.68793	1.35757	0.93391
1	1	1	0	2	11	0.99143	1.00000	0.99143	2.69602	2.67291
1	1	1	0	3	11	0.82656	1.28236	1.05994	0.36282	0.38457
1	1	1	0	4	11	0.95912	1.14790	1.10098	1.35842	1.49559
1	1	1	0	5	11	1.13800	1.00779	1.14686	1.49318	1.71247
1	1	1	0	6	11	1.30105	0.99819	1.29869	0.66165	0.85928
1	1	1	0	2	12	1.26983	0.99629	1.26512	0.70250	0.88875
1	1	1	0	3	12	1.06875	1.00268	1.07162	1.75296	1.87851
1	1	1	0	4	12	0.85443	1.00000	0.85443	0.67691	0.57837
1	1	1	0	5	12	1.04915	1.00000	1.04915	1.58673	1.66472
1	1	1	0	6	12	0.95541	1.00000	0.95541	0.61787	0.59032
1	1	1	0	2	13	1.08199	1.68365	1.82169	1.24798	2.27343
1	1	1	0	3	13	1.06567	0.99910	1.06471	1.19423	1.27150
1	1	1	0	4	13	0.83209	0.99721	0.82977	0.67097	0.55676
1	1	1	0	5	13	0.90011	1.02059	0.91864	1.39760	1.28389

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
1	1	1	1	4	7	0.90723	0.99990	0.90714	0.97471	0.88420
1	1	1	1	5	7	1.10205	0.99343	1.09481	0.72372	0.79233
1	1	1	1	6	7	0.88496	1.07215	0.94881	1.65486	1.57014
1	1	1	1	2	8	0.90189	0.94657	0.85370	0.73217	0.62506
1	1	1	1	3	8	0.93909	0.94845	0.89068	1.93397	1.72255
1	1	1	1	4	8	0.85032	1.04898	0.89197	0.38184	0.34059
1	1	1	1	5	8	0.99302	1.00452	0.99751	1.28607	1.28287
1	1	1	1	6	8	1.02153	1.04004	1.06243	1.33284	1.41605
1	1	1	1	2	9	0.97445	0.99549	0.97005	2.23483	2.16791
1	1	1	1	3	9	0.97968	1.01623	0.99559	0.38873	0.38702
1	1	1	1	4	9	0.92610	0.90546	0.83855	1.00000	0.83855
1	1	1	1	5	9	1.06471	1.00008	1.06479	1.67942	1.78824
1	1	1	1	6	9	1.07187	1.16874	1.25273	0.59544	0.74593
1	1	1	1	2	10	0.97795	1.03608	1.01324	1.74067	1.76371
1	1	1	1	3	10	1.00683	0.97921	0.98590	0.57449	0.56639
1	1	1	1	4	10	0.91756	1.00000	0.91756	3.45084	3.16635
1	1	1	1	5	10	1.22815	0.99790	1.22557	0.34904	0.42778
1	1	1	1	6	10	0.68962	0.99754	0.68793	1.35757	0.93391
1	1	1	1	2	11	0.99143	1.00000	0.99143	2.69602	2.67291
1	1	1	1	3	11	0.82656	1.28236	1.05994	0.36282	0.38457
1	1	1	1	4	11	0.95912	1.14790	1.10098	1.35842	1.49559
1	1	1	1	5	11	1.13800	1.00779	1.14686	1.49318	1.71247
1	1	1	1	6	11	1.30105	0.99819	1.29869	0.66165	0.85928
1	1	1	1	2	12	2.15275	0.43402	0.93434	1.28796	1.20339
1	1	1	1	3	12	3.63907	0.50117	1.82380	0.60520	1.10377
1	1	1	1	4	12	1.84789	0.33932	0.62702	1.25696	0.78813
1	1	1	1	5	12	2.78986	0.44038	1.22859	1.15709	1.42158
1	1	1	1	6	12	3.06650	0.33870	1.03863	0.52282	0.54302
1	1	1	1	2	13	1.08199	1.68365	1.82169	1.24798	2.27343
1	1	1	1	3	13	1.06567	0.99910	1.06471	1.19423	1.27150
1	1	1	1	4	13	0.83209	0.99721	0.82977	0.67097	0.55676
1	1	1	1	5	13	0.90011	1.02059	0.91864	1.39760	1.28389

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
1	1	1	0	6	13	0.75503	0.95246	0.71914	1.35343	0.97330
1	1	1	0	2	14	1.06720	1.00053	1.06777	0.78597	0.83923
1	1	1	0	3	14	0.95584	1.00349	0.95917	0.77222	0.74070
1	1	1	0	4	14	0.94997	0.95926	0.91127	1.65451	1.50770
1	1	1	0	5	14	1.08587	0.99388	1.07923	1.42506	1.53796
1	1	1	0	6	14	0.96589	1.00000	0.96589	0.86741	0.83782
1	1	1	0	2	15	0.95627	0.99612	0.95257	0.68451	0.65204
1	1	1	0	3	15	1.07441	0.96975	1.04192	0.97604	1.01695
1	1	1	0	4	15	0.82504	1.20456	0.99381	1.28341	1.27547
1	1	1	0	5	15	0.93909	0.99090	0.93054	1.57156	1.46240
1	1	1	0	6	15	0.81166	1.04497	0.84816	0.87286	0.74032
1	1	1	0	2	16	0.97788	0.99760	0.97554	1.31636	1.28416
1	1	1	0	3	16	1.02794	1.00151	1.02949	0.96385	0.99227
1	1	1	0	4	16	0.89932	0.98237	0.88346	0.95409	0.84290
1	1	1	0	5	16	0.84669	1.05657	0.89459	1.02871	0.92027
1	1	1	0	6	16	1.07706	1.00041	1.07751	0.82165	0.88533
1	1	1	0	2	17	1.02735	1.00023	1.02759	1.02681	1.05513
1	1	1	0	3	17	0.95734	0.99815	0.95557	1.34652	1.28669
1	1	1	0	4	17	0.96221	0.99916	0.96141	0.52106	0.50095
1	1	1	0	5	17	1.10497	1.02529	1.13292	1.36361	1.54485
1	1	1	0	6	17	0.84889	1.00612	0.85408	1.04015	0.88837
1	1	1	0	2	18	0.92405	0.98914	0.91401	0.71113	0.64998
1	1	1	0	3	18	0.97973	1.01092	0.99043	1.34220	1.32936
1	1	1	0	4	18	0.98410	1.02890	1.01254	0.74504	0.75439
1	1	1	0	5	18	1.15739	1.01493	1.17467	1.00000	1.17467
1	1	1	0	6	18	0.89639	1.02838	0.92183	1.00000	0.92183
1	1	1	0	2	19	1.03126	0.97979	1.01042	1.14825	1.16021
1	1	1	0	3	19	0.90928	1.00350	0.91246	1.04554	0.95401
1	1	1	0	4	19	1.03980	0.99938	1.03915	1.26418	1.31368
1	1	1	0	5	19	0.88559	0.99290	0.87930	0.47706	0.41948
1	1	1	0	6	19	0.89053	1.00441	0.89446	1.00000	0.89446
1	1	1	0	2	20	0.90485	0.98429	0.89064	0.56047	0.49917

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
1	1	1	1	6	13	0.75503	0.95246	0.71914	1.35343	0.97330
1	1	1	1	2	14	1.06720	1.00053	1.06777	0.78597	0.83923
1	1	1	1	3	14	0.95584	1.00349	0.95917	0.77222	0.74070
1	1	1	1	4	14	0.94997	0.95926	0.91127	1.65451	1.50770
1	1	1	1	5	14	1.08587	0.99388	1.07923	1.42506	1.53796
1	1	1	1	6	14	0.96589	1.00000	0.96589	0.86741	0.83782
1	1	1	1	2	15	0.95627	0.99612	0.95257	0.68451	0.65204
1	1	1	1	3	15	1.07441	0.96975	1.04192	0.97604	1.01695
1	1	1	1	4	15	0.82504	1.20456	0.99381	1.28341	1.27547
1	1	1	1	5	15	0.93909	0.99090	0.93054	1.57156	1.46240
1	1	1	1	6	15	0.81166	1.04497	0.84816	0.87286	0.74032
1	1	1	1	2	16	0.97788	0.99760	0.97554	1.31636	1.28416
1	1	1	1	3	16	1.02794	1.00151	1.02949	0.96385	0.99227
1	1	1	1	4	16	0.89932	0.98237	0.88346	0.95409	0.84290
1	1	1	1	5	16	0.84669	1.05657	0.89459	1.02871	0.92027
1	1	1	1	6	16	1.07706	1.00041	1.07751	0.82165	0.88533
1	1	1	1	2	17	1.02735	1.00023	1.02759	1.02681	1.05513
1	1	1	1	3	17	0.95734	0.99815	0.95557	1.34652	1.28669
1	1	1	1	4	17	0.96221	0.99916	0.96141	0.52106	0.50095
1	1	1	1	5	17	1.10497	1.02529	1.13292	1.36361	1.54485
1	1	1	1	6	17	0.84889	1.00612	0.85408	1.04015	0.88837
1	1	1	1	2	18	0.92405	0.98914	0.91401	0.71113	0.64998
1	1	1	1	3	18	0.97973	1.01092	0.99043	1.34220	1.32936
1	1	1	1	4	18	0.98410	1.02890	1.01254	0.74504	0.75439
1	1	1	1	5	18	1.15739	1.01493	1.17467	1.00000	1.17467
1	1	1	1	6	18	0.89639	1.02838	0.92183	1.00000	0.92183
1	1	1	1	2	19	1.03126	0.97979	1.01042	1.14825	1.16021
1	1	1	1	3	19	0.90928	1.00350	0.91246	1.04554	0.95401
1	1	1	1	4	19	1.03980	0.99938	1.03915	1.26418	1.31368
1	1	1	1	5	19	0.88559	0.99290	0.87930	0.47706	0.41948
1	1	1	1	6	19	0.89053	1.00441	0.89446	1.00000	0.89446
1	1	1	1	2	20	0.90485	0.98429	0.89064	0.56047	0.49917

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
1	1	1	0	3	20	1.08470	1.00000	1.08470	1.31430	1.42563
1	1	1	0	4	20	1.02805	1.00000	1.02805	1.50969	1.55204
1	1	1	0	5	20	1.04491	1.00000	1.04491	1.27530	1.33258
1	1	1	0	6	20	1.03027	1.00000	1.03027	0.61004	0.62850
1	1	1	0	2	21	1.05259	1.01413	1.06747	1.66858	1.78115
1	1	1	0	3	21	1.08178	0.99992	1.08169	0.67091	0.72571
1	1	1	0	4	21	0.78956	1.00822	0.79605	0.94456	0.75191
1	1	1	0	5	21	0.96038	0.99896	0.95938	0.96307	0.92395
1	1	1	0	6	21	0.91400	1.00000	0.91400	1.19841	1.09534
1	1	1	0	2	22	1.03923	0.99280	1.03174	1.55347	1.60278
1	1	1	0	3	22	0.89212	0.96270	0.85884	0.67226	0.57737
1	1	1	0	4	22	1.07307	1.01893	1.09339	1.08254	1.18364
1	1	1	0	5	22	1.08217	1.00525	1.08785	1.26764	1.37900
1	1	1	0	6	22	0.78448	0.95474	0.74898	1.02315	0.76631
1	1	1	0	2	23	1.00809	1.00558	1.01371	2.06843	2.09679
1	1	1	0	3	23	1.06425	0.97462	1.03724	0.93454	0.96934
1	1	1	0	4	23	0.92437	0.95003	0.87818	0.51732	0.45430
1	1	1	0	5	23	0.91431	0.99074	0.90585	1.07089	0.97006
1	1	1	0	6	23	0.70884	0.99825	0.70760	1.43632	1.01634
1	1	1	0	2	24	0.99697	0.98321	0.98023	1.00000	0.98023
1	1	1	0	3	24	1.00032	0.99968	1.00000	1.00000	1.00000
1	1	1	0	4	24	1.04848	0.95376	1.00000	1.00000	1.00000
1	1	1	0	5	24	1.02484	1.01780	1.04309	1.00000	1.04309
1	1	1	0	6	24	0.90813	0.98377	0.89340	1.00000	0.89340
1	1	1	0	2	25	0.90276	1.07382	0.96940	0.57267	0.55515
1	1	1	0	3	25	0.90271	1.03944	0.93831	1.33101	1.24890
1	1	1	0	4	25	0.91547	1.07051	0.98002	0.83257	0.81593
1	1	1	0	5	25	1.12062	0.98083	1.09914	0.90240	0.99187
1	1	1	0	6	25	0.85398	1.02152	0.87236	1.94131	1.69351
1	1	1	0	2	26	0.97022	1.03035	0.99967	0.66584	0.66562
1	1	1	0	3	26	1.08545	0.95357	1.03505	1.53672	1.59058
1	1	1	0	4	26	0.94025	0.99763	0.93802	1.31035	1.22913

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
1	1	1	1	3	20	1.08470	1.00000	1.08470	1.31430	1.42563
1	1	1	1	4	20	1.02805	1.00000	1.02805	1.50969	1.55204
1	1	1	1	5	20	1.04491	1.00000	1.04491	1.27530	1.33258
1	1	1	1	6	20	1.03027	1.00000	1.03027	0.61004	0.62850
1	1	1	1	2	21	1.05259	1.01413	1.06747	1.66858	1.78115
1	1	1	1	3	21	1.08178	0.99992	1.08169	0.67091	0.72571
1	1	1	1	4	21	0.78956	1.00822	0.79605	0.94456	0.75191
1	1	1	1	5	21	0.96038	0.99896	0.95938	0.96307	0.92395
1	1	1	1	6	21	0.91400	1.00000	0.91400	1.19841	1.09534
1	1	1	1	2	22	1.03923	0.99280	1.03174	1.55347	1.60278
1	1	1	1	3	22	0.89212	0.96270	0.85884	0.67226	0.57737
1	1	1	1	4	22	1.07307	1.01893	1.09339	1.08254	1.18364
1	1	1	1	5	22	1.08217	1.00525	1.08785	1.26764	1.37900
1	1	1	1	6	22	0.78448	0.95474	0.74898	1.02315	0.76631
1	1	1	1	2	23	1.00809	1.00558	1.01371	2.06843	2.09679
1	1	1	1	3	23	1.06425	0.97462	1.03724	0.93454	0.96934
1	1	1	1	4	23	0.92437	0.95003	0.87818	0.51732	0.45430
1	1	1	1	5	23	0.91431	0.99074	0.90585	1.07089	0.97006
1	1	1	1	6	23	0.70884	0.99825	0.70760	1.43632	1.01634
1	1	1	1	2	24	0.99697	0.98321	0.98023	1.00000	0.98023
1	1	1	1	3	24	1.00032	0.99968	1.00000	1.00000	1.00000
1	1	1	1	4	24	1.04848	0.95376	1.00000	1.00000	1.00000
1	1	1	1	5	24	1.02484	1.01780	1.04309	1.00000	1.04309
1	1	1	1	6	24	0.90813	0.98377	0.89340	1.00000	0.89340
1	1	1	1	2	25	0.90276	1.07382	0.96940	0.57267	0.55515
1	1	1	1	3	25	0.90271	1.03944	0.93831	1.33101	1.24890
1	1	1	1	4	25	0.91547	1.07051	0.98002	0.83257	0.81593
1	1	1	1	5	25	1.12062	0.98083	1.09914	0.90240	0.99187
1	1	1	1	6	25	0.85398	1.02152	0.87236	1.94131	1.69351
1	1	1	1	2	26	0.97022	1.03035	0.99967	0.66584	0.66562
1	1	1	1	3	26	1.08545	0.95357	1.03505	1.53672	1.59058
1	1	1	1	4	26	0.94025	0.99763	0.93802	1.31035	1.22913

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
1	1	1	0	5	26	1.17142	1.00114	1.17276	0.74745	0.87658
1	1	1	0	6	26	0.77791	0.99887	0.77703	1.42196	1.10490
1	1	1	0	2	27	0.97795	0.93350	0.91291	0.55409	0.50584
1	1	1	0	3	27	1.03342	0.97887	1.01159	1.48526	1.50247
1	1	1	0	4	27	0.90156	0.99364	0.89582	0.67328	0.60314
1	1	1	0	5	27	1.08833	1.00228	1.09081	1.41481	1.54329
1	1	1	0	6	27	0.77953	1.00446	0.78301	1.20804	0.94590
1	1	1	0	2	28	0.88370	0.99980	0.88352	1.14166	1.00868
1	1	1	0	3	28	1.07524	0.99999	1.07524	0.65402	0.70322
1	1	1	0	4	28	0.96803	1.00116	0.96915	1.31558	1.27499
1	1	1	0	5	28	1.12035	1.00000	1.12035	0.70369	0.78838
1	1	1	0	6	28	0.75112	1.00000	0.75112	1.33082	0.99960
1	1	1	0	2	29	0.98681	1.00872	0.99541	1.31959	1.31354
1	1	1	0	3	29	0.98305	0.93843	0.92252	0.41733	0.38499
1	1	1	0	4	29	1.00800	1.01336	1.02146	1.23434	1.26083
1	1	1	0	5	29	1.06625	1.00000	1.06625	0.81015	0.86382
1	1	1	0	6	29	1.04146	0.94885	0.98819	2.40119	2.37283
1	1	1	0	2	30	0.94533	0.99075	0.93659	0.80253	0.75164
1	1	1	0	3	30	1.05449	1.02549	1.08136	0.91705	0.99166
1	1	1	0	4	30	0.89776	0.92787	0.83300	1.15897	0.96543
1	1	1	0	5	30	1.06095	0.99829	1.05914	0.97521	1.03288
1	1	1	0	6	30	0.98208	1.00567	0.98765	0.61223	0.60467
1	1	1	0	2	31	0.91228	1.11880	1.02065	1.04243	1.06396
1	1	1	0	3	31	1.05743	1.02215	1.08085	0.95929	1.03685
1	1	1	0	4	31	0.96325	0.97080	0.93513	1.00000	0.93513
1	1	1	0	5	31	1.06018	0.97683	1.03562	1.20015	1.24290
1	1	1	0	6	31	1.14226	0.99790	1.13987	1.26232	1.43888
1	1	1	0	2	32	0.96023	0.98176	0.94271	1.00000	0.94271
1	1	1	0	3	32	1.06071	0.94276	1.00000	1.00000	1.00000
1	1	1	0	4	32	0.86320	0.90138	0.77807	1.00000	0.77807
1	1	1	0	5	32	1.06444	1.06444	1.13303	1.00000	1.13303
1	1	1	0	6	32	1.00000	1.00000	1.00000	1.00000	1.00000

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
1	1	1	1	5	26	1.17142	1.00114	1.17276	0.74745	0.87658
1	1	1	1	6	26	0.77791	0.99887	0.77703	1.42196	1.10490
1	1	1	1	2	27	0.97795	0.93350	0.91291	0.55409	0.50584
1	1	1	1	3	27	1.03342	0.97887	1.01159	1.48526	1.50247
1	1	1	1	4	27	0.90156	0.99364	0.89582	0.67328	0.60314
1	1	1	1	5	27	1.08833	1.00228	1.09081	1.41481	1.54329
1	1	1	1	6	27	0.77953	1.00446	0.78301	1.20804	0.94590
1	1	1	1	2	28	0.88370	0.99980	0.88352	1.14166	1.00868
1	1	1	1	3	28	1.07524	0.99999	1.07524	0.65402	0.70322
1	1	1	1	4	28	0.96803	1.00116	0.96915	1.31558	1.27499
1	1	1	1	5	28	1.12035	1.00000	1.12035	0.70369	0.78838
1	1	1	1	6	28	0.75112	1.00000	0.75112	1.33082	0.99960
1	1	1	1	2	29	0.98681	1.00872	0.99541	1.31959	1.31354
1	1	1	1	3	29	0.98305	0.93843	0.92252	0.41733	0.38499
1	1	1	1	4	29	1.00800	1.01336	1.02146	1.23434	1.26083
1	1	1	1	5	29	1.06625	1.00000	1.06625	0.81015	0.86382
1	1	1	1	6	29	1.04146	0.94885	0.98819	2.40119	2.37283
1	1	1	1	2	30	0.94533	0.99075	0.93659	0.80253	0.75164
1	1	1	1	3	30	1.05449	1.02549	1.08136	0.91705	0.99166
1	1	1	1	4	30	0.89776	0.92787	0.83300	1.15897	0.96543
1	1	1	1	5	30	1.06095	0.99829	1.05914	0.97521	1.03288
1	1	1	1	6	30	0.98208	1.00567	0.98765	0.61223	0.60467
1	1	1	1	2	31	0.91228	1.11880	1.02065	1.04243	1.06396
1	1	1	1	3	31	1.05743	1.02215	1.08085	0.95929	1.03685
1	1	1	1	4	31	0.96325	0.97080	0.93513	1.00000	0.93513
1	1	1	1	5	31	1.06018	0.97683	1.03562	1.20015	1.24290
1	1	1	1	6	31	1.14226	0.99790	1.13987	1.26232	1.43888
1	1	1	1	2	32	0.96023	0.98176	0.94271	1.00000	0.94271
1	1	1	1	3	32	1.06071	0.94276	1.00000	1.00000	1.00000
1	1	1	1	4	32	0.86320	0.90138	0.77807	1.00000	0.77807
1	1	1	1	5	32	1.06444	1.06444	1.13303	1.00000	1.13303
1	1	1	1	6	32	1.00000	1.00000	1.00000	1.00000	1.00000

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
1	1	1	0	2	33	1.04543	0.94928	0.99240	1.35920	1.34887
1	1	1	0	3	33	0.97502	0.99889	0.97393	0.39263	0.38240
1	1	1	0	4	33	1.14104	0.85341	0.97377	1.00000	0.97377
1	1	1	0	5	33	0.86018	1.27033	1.09271	1.00000	1.09271
1	1	1	0	6	33	0.91358	0.99801	0.91176	2.40471	2.19251
1	1	1	0	2	34	1.08756	1.00341	1.09127	0.72318	0.78918
1	1	1	0	3	34	0.94730	0.98404	0.93218	0.57027	0.53160
1	1	1	0	4	34	0.96904	1.07249	1.03928	1.94437	2.02075
1	1	1	0	5	34	0.96566	1.01067	0.97597	0.51431	0.50195
1	1	1	0	6	34	1.09511	0.96991	1.06215	1.34880	1.43263
1	1	1	0	2	35	1.07389	0.99325	1.06663	1.22451	1.30611
1	1	1	0	3	35	1.04723	0.99730	1.04440	0.53135	0.55494
1	1	1	0	4	35	0.92458	0.98260	0.90849	1.18725	1.07861
1	1	1	0	5	35	1.06331	1.00859	1.07244	0.95749	1.02686
1	1	1	0	6	35	0.93080	0.99465	0.92583	1.19167	1.10328
1	1	1	0	2	36	1.04996	1.00359	1.05372	1.00000	1.05372
1	1	1	0	3	36	1.11186	0.85883	0.95489	1.00000	0.95489
1	1	1	0	4	36	1.05691	0.99468	1.05129	1.00000	1.05129
1	1	1	0	5	36	1.11925	1.04416	1.16868	1.09518	1.27992
1	1	1	0	6	36	0.79172	0.94404	0.74741	0.91309	0.68245
1	1	1	0	2	37	0.78677	0.99440	0.78236	0.96450	0.75459
1	1	1	0	3	37	1.08445	0.96084	1.04199	1.14943	1.19769
1	1	1	0	4	37	0.87978	1.00433	0.88359	0.93969	0.83030
1	1	1	0	5	37	0.81162	1.01652	0.82503	1.14819	0.94729
1	1	1	0	6	37	1.10601	0.99597	1.10154	0.90436	0.99619
1	1	1	0	2	38	0.97082	1.00666	0.97728	1.10508	1.07998
1	1	1	0	3	38	1.02517	0.99919	1.02434	0.98507	1.00905
1	1	1	0	4	38	0.85276	1.00213	0.85458	0.62905	0.53758
1	1	1	0	5	38	1.00319	1.09904	1.10255	1.41036	1.55499
1	1	1	0	6	38	0.71248	0.97992	0.69818	1.22191	0.85312
1	1	1	0	2	39	0.87574	1.00013	0.87585	0.93695	0.82063
1	1	1	0	3	39	0.81195	1.16146	0.94305	0.98306	0.92708

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
1	1	1	1	2	33	1.04543	0.94928	0.99240	1.35920	1.34887
1	1	1	1	3	33	0.97502	0.99889	0.97393	0.39263	0.38240
1	1	1	1	4	33	1.14104	0.85341	0.97377	1.00000	0.97377
1	1	1	1	5	33	0.86018	1.27033	1.09271	1.00000	1.09271
1	1	1	1	6	33	0.91358	0.99801	0.91176	2.40471	2.19251
1	1	1	1	2	34	1.08756	1.00341	1.09127	0.72318	0.78918
1	1	1	1	3	34	0.94730	0.98404	0.93218	0.57027	0.53160
1	1	1	1	4	34	0.96904	1.07249	1.03928	1.94437	2.02075
1	1	1	1	5	34	0.96566	1.01067	0.97597	0.51431	0.50195
1	1	1	1	6	34	1.09511	0.96991	1.06215	1.34880	1.43263
1	1	1	1	2	35	1.07389	0.99325	1.06663	1.22451	1.30611
1	1	1	1	3	35	1.04723	0.99730	1.04440	0.53135	0.55494
1	1	1	1	4	35	0.92458	0.98260	0.90849	1.18725	1.07861
1	1	1	1	5	35	1.06331	1.00859	1.07244	0.95749	1.02686
1	1	1	1	6	35	0.93080	0.99465	0.92583	1.19167	1.10328
1	1	1	1	2	36	1.04996	1.00359	1.05372	1.00000	1.05372
1	1	1	1	3	36	1.11186	0.85883	0.95489	1.00000	0.95489
1	1	1	1	4	36	1.05691	0.99468	1.05129	1.00000	1.05129
1	1	1	1	5	36	1.11925	1.04416	1.16868	1.09518	1.27992
1	1	1	1	6	36	0.79172	0.94404	0.74741	0.91309	0.68245
1	1	1	1	2	37	0.78677	0.99440	0.78236	0.96450	0.75459
1	1	1	1	3	37	1.08445	0.96084	1.04199	1.14943	1.19769
1	1	1	1	4	37	0.87978	1.00433	0.88359	0.93969	0.83030
1	1	1	1	5	37	0.81162	1.01652	0.82503	1.14819	0.94729
1	1	1	1	6	37	1.10601	0.99597	1.10154	0.90436	0.99619
1	1	1	1	2	38	0.97082	1.00666	0.97728	1.10508	1.07998
1	1	1	1	3	38	1.02517	0.99919	1.02434	0.98507	1.00905
1	1	1	1	4	38	0.85276	1.00213	0.85458	0.62905	0.53758
1	1	1	1	5	38	1.00319	1.09904	1.10255	1.41036	1.55499
1	1	1	1	6	38	0.71248	0.97992	0.69818	1.22191	0.85312
1	1	1	1	2	39	0.87574	1.00013	0.87585	0.93695	0.82063
1	1	1	1	3	39	0.81195	1.16146	0.94305	0.98306	0.92708

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
1	1	1	0	4	39	1.08933	1.00865	1.09875	1.69504	1.86242
1	1	1	0	5	39	0.96038	1.04814	1.00662	0.76357	0.76862
1	1	1	0	6	39	0.86599	1.00010	0.86608	1.43200	1.24023
1	1	1	0	2	40	0.95817	0.98270	0.94159	0.55095	0.51877
1	1	1	0	3	40	1.06105	0.97710	1.03676	0.72660	0.75331
1	1	1	0	4	40	0.96419	1.04086	1.00359	1.38998	1.39496
1	1	1	0	5	40	1.02546	0.99981	1.02526	1.67124	1.71346
1	1	1	0	6	40	1.08631	0.97215	1.05605	0.46747	0.49367
1	1	1	0	2	41	1.01790	1.00000	1.01790	1.14321	1.16367
1	1	1	0	3	41	0.97709	1.00247	0.97951	1.34704	1.31944
1	1	1	0	4	41	0.86169	1.00522	0.86619	1.05254	0.91170
1	1	1	0	5	41	1.14283	1.00622	1.14994	0.50344	0.57893
1	1	1	0	6	41	0.90869	1.01056	0.91829	2.05943	1.89115
1	1	1	0	2	42	0.99869	0.98492	0.98363	0.42933	0.42230
1	1	1	0	3	42	0.79983	0.96467	0.77157	0.82778	0.63869
1	1	1	0	4	42	1.36285	1.04155	1.41948	2.11210	2.99808
1	1	1	0	5	42	1.01798	1.00000	1.01798	0.74516	0.75856
1	1	1	0	6	42	0.92756	1.00000	0.92756	1.09377	1.01454
1	1	1	0	2	43	1.07135	1.01547	1.08793	1.17561	1.27898
1	1	1	0	3	43	1.05324	1.00000	1.05324	1.15544	1.21695
1	1	1	0	4	43	1.01865	1.00000	1.01865	1.64535	1.67603
1	1	1	0	5	43	1.04882	1.00000	1.04882	0.58997	0.61878
1	1	1	0	6	43	1.26533	1.00000	1.26533	1.28942	1.63154
1	1	1	0	2	44	0.92707	1.12896	1.04662	0.72695	0.76085
1	1	1	0	3	44	1.03219	0.99971	1.03189	1.61029	1.66164
1	1	1	0	4	44	0.97417	0.99814	0.97235	0.86374	0.83986
1	1	1	0	5	44	0.87407	1.00519	0.87861	1.56617	1.37605
1	1	1	0	6	44	1.06173	0.98284	1.04352	0.54017	0.56367
1	1	1	0	2	45	1.04823	0.99974	1.04796	1.02016	1.06908
1	1	1	0	3	45	0.85332	0.99962	0.85300	1.04806	0.89399
1	1	1	0	4	45	1.13401	1.00044	1.13452	1.05398	1.19576
1	1	1	0	5	45	0.98317	1.00041	0.98358	0.91337	0.89837

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
1	1	1	1	4	39	1.08933	1.00865	1.09875	1.69504	1.86242
1	1	1	1	5	39	0.96038	1.04814	1.00662	0.76357	0.76862
1	1	1	1	6	39	0.86599	1.00010	0.86608	1.43200	1.24023
1	1	1	1	2	40	0.95817	0.98270	0.94159	0.55095	0.51877
1	1	1	1	3	40	1.06105	0.97710	1.03676	0.72660	0.75331
1	1	1	1	4	40	0.96419	1.04086	1.00359	1.38998	1.39496
1	1	1	1	5	40	1.02546	0.99981	1.02526	1.67124	1.71346
1	1	1	1	6	40	1.08631	0.97215	1.05605	0.46747	0.49367
1	1	1	1	2	41	1.01790	1.00000	1.01790	1.14321	1.16367
1	1	1	1	3	41	0.97709	1.00247	0.97951	1.34704	1.31944
1	1	1	1	4	41	0.86169	1.00522	0.86619	1.05254	0.91170
1	1	1	1	5	41	1.14283	1.00622	1.14994	0.50344	0.57893
1	1	1	1	6	41	0.90869	1.01056	0.91829	2.05943	1.89115
1	1	1	1	2	42	0.99869	0.98492	0.98363	0.42933	0.42230
1	1	1	1	3	42	0.79983	0.96467	0.77157	0.82778	0.63869
1	1	1	1	4	42	1.36285	1.04155	1.41948	2.11210	2.99808
1	1	1	1	5	42	1.01798	1.00000	1.01798	0.74516	0.75856
1	1	1	1	6	42	0.92756	1.00000	0.92756	1.09377	1.01454
1	1	1	1	2	43	1.07135	1.01547	1.08793	1.17561	1.27898
1	1	1	1	3	43	1.05324	1.00000	1.05324	1.15544	1.21695
1	1	1	1	4	43	1.01865	1.00000	1.01865	1.64535	1.67603
1	1	1	1	5	43	1.04882	1.00000	1.04882	0.58997	0.61878
1	1	1	1	6	43	1.26533	1.00000	1.26533	1.28942	1.63154
1	1	1	1	2	44	0.92707	1.12896	1.04662	0.72695	0.76085
1	1	1	1	3	44	1.03219	0.99971	1.03189	1.61029	1.66164
1	1	1	1	4	44	0.97417	0.99814	0.97235	0.86374	0.83986
1	1	1	1	5	44	0.87407	1.00519	0.87861	1.56617	1.37605
1	1	1	1	6	44	1.06173	0.98284	1.04352	0.54017	0.56367
1	1	1	1	2	45	1.04823	0.99974	1.04796	1.02016	1.06908
1	1	1	1	3	45	0.85332	0.99962	0.85300	1.04806	0.89399
1	1	1	1	4	45	1.13401	1.00044	1.13452	1.05398	1.19576
1	1	1	1	5	45	0.98317	1.00041	0.98358	0.91337	0.89837

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
1	1	1	0	6	45	1.21754	1.00154	1.21942	0.90079	1.09843
1	1	1	0	2	46	1.01206	0.99748	1.00951	0.78798	0.79548
1	1	1	0	3	46	0.98270	1.02544	1.00770	1.39293	1.40366
1	1	1	0	4	46	0.92083	0.98811	0.90988	0.86218	0.78448
1	1	1	0	5	46	0.72436	0.97324	0.70498	1.27995	0.90234
1	1	1	0	6	46	1.54435	1.01785	1.57191	0.65055	1.02261
1	1	1	0	2	47	1.01841	1.04518	1.06442	0.68597	0.73016
1	1	1	0	3	47	1.03945	1.02977	1.07039	1.00000	1.07039
1	1	1	0	4	47	0.98999	0.99992	0.98991	1.00000	0.98991
1	1	1	0	5	47	0.93380	0.99278	0.92705	1.00000	0.92705
1	1	1	0	6	47	0.83450	0.99290	0.82858	1.00000	0.82858
1	1	1	0	2	48	1.00007	1.06986	1.06994	1.00000	1.06994
1	1	1	0	3	48	0.89618	1.11584	1.00000	1.00000	1.00000
1	1	1	0	4	48	0.83022	0.82920	0.68842	1.14879	0.79085
1	1	1	0	5	48	1.01738	0.98670	1.00385	0.87048	0.87383
1	1	1	0	6	48	1.02580	1.00553	1.03148	1.00000	1.03148
1	1	1	0	2	49	1.13861	1.01603	1.15686	0.87876	1.01660
1	1	1	0	3	49	0.99639	0.99018	0.98661	0.99586	0.98252
1	1	1	0	4	49	0.89421	1.00158	0.89563	0.72601	0.65023
1	1	1	0	5	49	0.97938	0.99236	0.97190	0.92933	0.90321
1	1	1	0	6	49	0.82389	1.04195	0.85845	1.60902	1.38127
1	1	1	0	2	50	1.04715	1.00281	1.05009	1.01693	1.06786
1	1	1	0	3	50	1.09297	1.00000	1.09297	0.83148	0.90878
1	1	1	0	4	50	0.81447	0.99321	0.80894	0.92295	0.74661
1	1	1	0	5	50	1.09355	0.99392	1.08690	0.99333	1.07966
1	1	1	0	6	50	0.67488	1.00000	0.67488	1.58303	1.06835
1	2	1	0	2	1	1.04085	1.00870	1.04990	0.90942	0.95480
1	2	1	0	3	1	1.02850	1.00084	1.02936	1.80452	1.85750
1	2	1	0	4	1	1.00587	1.00255	1.00843	0.66335	0.66895
1	2	1	0	5	1	1.07065	1.00755	1.07873	0.78209	0.84366
1	2	1	0	6	1	1.11022	0.99862	1.10869	1.52823	1.69433
1	2	1	0	2	2	0.97477	0.92059	0.89736	0.88596	0.79503

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
1	1	1	1	6	45	1.21754	1.00154	1.21942	0.90079	1.09843
1	1	1	1	2	46	1.01206	0.99748	1.00951	0.78798	0.79548
1	1	1	1	3	46	0.98270	1.02544	1.00770	1.39293	1.40366
1	1	1	1	4	46	0.92083	0.98811	0.90988	0.86218	0.78448
1	1	1	1	5	46	0.72436	0.97324	0.70498	1.27995	0.90234
1	1	1	1	6	46	1.54435	1.01785	1.57191	0.65055	1.02261
1	1	1	1	2	47	1.01841	1.04518	1.06442	0.68597	0.73016
1	1	1	1	3	47	1.03945	1.02977	1.07039	1.00000	1.07039
1	1	1	1	4	47	0.98999	0.99992	0.98991	1.00000	0.98991
1	1	1	1	5	47	0.93380	0.99278	0.92705	1.00000	0.92705
1	1	1	1	6	47	0.83450	0.99290	0.82858	1.00000	0.82858
1	1	1	1	2	48	1.00007	1.06986	1.06994	1.00000	1.06994
1	1	1	1	3	48	0.89618	1.11584	1.00000	1.00000	1.00000
1	1	1	1	4	48	0.83022	0.82920	0.68842	1.14879	0.79085
1	1	1	1	5	48	1.01738	0.98670	1.00385	0.87048	0.87383
1	1	1	1	6	48	1.02580	1.00553	1.03148	1.00000	1.03148
1	1	1	1	2	49	1.13861	1.01603	1.15686	0.87876	1.01660
1	1	1	1	3	49	0.99639	0.99018	0.98661	0.99586	0.98252
1	1	1	1	4	49	0.89421	1.00158	0.89563	0.72601	0.65023
1	1	1	1	5	49	0.97938	0.99236	0.97190	0.92933	0.90321
1	1	1	1	6	49	0.82389	1.04195	0.85845	1.60902	1.38127
1	1	1	1	2	50	1.04715	1.00281	1.05009	1.01693	1.06786
1	1	1	1	3	50	1.09297	1.00000	1.09297	0.83148	0.90878
1	1	1	1	4	50	0.81447	0.99321	0.80894	0.92295	0.74661
1	1	1	1	5	50	1.09355	0.99392	1.08690	0.99333	1.07966
1	1	1	1	6	50	0.67488	1.00000	0.67488	1.58303	1.06835
1	2	1	1	2	1	1.04085	1.00870	1.04990	0.90942	0.95480
1	2	1	1	3	1	1.02850	1.00084	1.02936	1.80452	1.85750
1	2	1	1	4	1	1.00587	1.00255	1.00843	0.66335	0.66895
1	2	1	1	5	1	1.07065	1.00755	1.07873	0.78209	0.84366
1	2	1	1	6	1	1.11022	0.99862	1.10869	1.52823	1.69433
1	2	1	1	2	2	0.97477	0.92059	0.89736	0.88596	0.79503

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
1	2	1	0	3	2	0.93417	0.98062	0.91606	1.92736	1.76558
1	2	1	0	4	2	0.84204	0.91920	0.77401	0.49990	0.38692
1	2	1	0	5	2	1.05277	0.99768	1.05033	1.99096	2.09116
1	2	1	0	6	2	0.86832	1.00502	0.87268	0.72939	0.63653
1	2	1	0	2	3	0.95846	1.04334	1.00000	1.00000	1.00000
1	2	1	0	3	3	1.03137	0.96959	1.00000	1.00000	1.00000
1	2	1	0	4	3	1.03149	0.96947	1.00000	1.00000	1.00000
1	2	1	0	5	3	1.05235	0.95026	1.00000	1.00000	1.00000
1	2	1	0	6	3	0.98779	1.01237	1.00000	1.00000	1.00000
1	2	1	0	2	4	1.03798	0.92241	0.95745	1.41727	1.35696
1	2	1	0	3	4	1.07423	1.00000	1.07423	0.97835	1.05097
1	2	1	0	4	4	0.92377	0.94974	0.87733	1.16974	1.02625
1	2	1	0	5	4	1.17551	1.04405	1.22729	0.78968	0.96917
1	2	1	0	6	4	0.88247	1.00742	0.88901	0.82330	0.73192
1	2	1	0	2	5	1.16940	1.00695	1.17753	1.08427	1.27676
1	2	1	0	3	5	0.99512	0.98973	0.98489	1.07587	1.05962
1	2	1	0	4	5	0.97241	0.93868	0.91278	0.85724	0.78247
1	2	1	0	5	5	1.03826	0.96446	1.00136	1.10807	1.10957
1	2	1	0	6	5	0.96916	0.99958	0.96875	1.14027	1.10464
1	2	1	0	2	6	0.98099	0.99125	0.97240	1.04514	1.01630
1	2	1	0	3	6	1.08352	1.01798	1.10300	0.98577	1.08730
1	2	1	0	4	6	0.81777	1.05068	0.85922	1.83759	1.57889
1	2	1	0	5	6	1.09209	1.00000	1.09209	0.67188	0.73376
1	2	1	0	6	6	0.99721	0.99924	0.99646	0.88243	0.87930
1	2	1	0	2	7	1.00000	1.00000	1.00000	1.00000	1.00000
1	2	1	0	3	7	0.91995	0.93027	0.85581	1.36537	1.16849
1	2	1	0	4	7	1.01363	1.00169	1.01534	0.73240	0.74364
1	2	1	0	5	7	0.94050	1.00200	0.94238	1.00000	0.94238
1	2	1	0	6	7	0.96102	1.04056	1.00000	1.00000	1.00000
1	2	1	0	2	8	0.89329	0.93280	0.83326	0.71079	0.59227
1	2	1	0	3	8	1.04803	1.04873	1.09910	1.72241	1.89310
1	2	1	0	4	8	0.93615	0.99604	0.93245	0.44936	0.41900

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
1	2	1	1	3	2	0.93417	0.98062	0.91606	1.92736	1.76558
1	2	1	1	4	2	0.84204	0.91920	0.77401	0.49990	0.38692
1	2	1	1	5	2	1.05277	0.99768	1.05033	1.99096	2.09116
1	2	1	1	6	2	0.86832	1.00502	0.87268	0.72939	0.63653
1	2	1	1	2	3	0.95846	1.04334	1.00000	1.00000	1.00000
1	2	1	1	3	3	1.03137	0.96959	1.00000	1.00000	1.00000
1	2	1	1	4	3	1.03149	0.96947	1.00000	1.00000	1.00000
1	2	1	1	5	3	1.05235	0.95026	1.00000	1.00000	1.00000
1	2	1	1	6	3	0.98779	1.01237	1.00000	1.00000	1.00000
1	2	1	1	2	4	1.03798	0.92241	0.95745	1.41727	1.35696
1	2	1	1	3	4	1.07423	1.00000	1.07423	0.97835	1.05097
1	2	1	1	4	4	0.92377	0.94974	0.87733	1.16974	1.02625
1	2	1	1	5	4	1.17551	1.04405	1.22729	0.78968	0.96917
1	2	1	1	6	4	0.88247	1.00742	0.88901	0.82330	0.73192
1	2	1	1	2	5	1.16940	1.00695	1.17753	1.08427	1.27676
1	2	1	1	3	5	0.99512	0.98973	0.98489	1.07587	1.05962
1	2	1	1	4	5	0.97241	0.93868	0.91278	0.85724	0.78247
1	2	1	1	5	5	1.03826	0.96446	1.00136	1.10807	1.10957
1	2	1	1	6	5	0.96916	0.99958	0.96875	1.14027	1.10464
1	2	1	1	2	6	0.98099	0.99125	0.97240	1.04514	1.01630
1	2	1	1	3	6	1.08352	1.01798	1.10300	0.98577	1.08730
1	2	1	1	4	6	0.81777	1.05068	0.85922	1.83759	1.57889
1	2	1	1	5	6	1.09209	1.00000	1.09209	0.67188	0.73376
1	2	1	1	6	6	0.99721	0.99924	0.99646	0.88243	0.87930
1	2	1	1	2	7	1.00000	1.00000	1.00000	1.00000	1.00000
1	2	1	1	3	7	0.91995	0.93027	0.85581	1.36537	1.16849
1	2	1	1	4	7	1.01363	1.00169	1.01534	0.73240	0.74364
1	2	1	1	5	7	0.94050	1.00200	0.94238	1.00000	0.94238
1	2	1	1	6	7	0.96102	1.04056	1.00000	1.00000	1.00000
1	2	1	1	2	8	0.89329	0.93280	0.83326	0.71079	0.59227
1	2	1	1	3	8	1.04803	1.04873	1.09910	1.72241	1.89310
1	2	1	1	4	8	0.93615	0.99604	0.93245	0.44936	0.41900

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
1	2	1	0	5	8	1.00053	0.99947	1.00000	1.00000	1.00000
1	2	1	0	6	8	1.08986	1.08183	1.17905	1.25293	1.47727
1	2	1	0	2	9	0.97594	0.99379	0.96989	2.23569	2.16837
1	2	1	0	3	9	1.00087	0.99902	0.99989	0.38885	0.38881
1	2	1	0	4	9	1.12087	0.99488	1.11513	1.00000	1.11513
1	2	1	0	5	9	1.10450	1.00037	1.10491	1.61252	1.78168
1	2	1	0	6	9	0.91371	1.01300	0.92559	0.62015	0.57401
1	2	1	0	2	10	0.95840	1.09223	1.04680	1.17860	1.23375
1	2	1	0	3	10	1.01332	1.00148	1.01482	0.84847	0.86104
1	2	1	0	4	10	1.05941	0.87971	0.93197	3.18391	2.96733
1	2	1	0	5	10	1.26313	0.99664	1.25888	0.34753	0.43750
1	2	1	0	6	10	0.80525	1.00026	0.80546	1.16866	0.94131
1	2	1	0	2	11	1.08170	0.89841	0.97181	2.40144	2.33374
1	2	1	0	3	11	0.89643	1.17123	1.04992	0.41642	0.43721
1	2	1	0	4	11	0.97383	1.16841	1.13784	1.28152	1.45816
1	2	1	0	5	11	1.18732	1.00757	1.19630	1.56543	1.87273
1	2	1	0	6	11	1.20288	0.99528	1.19720	0.64466	0.77179
1	2	1	0	2	12	1.21395	0.95782	1.16274	1.00000	1.16274
1	2	1	0	3	12	1.23199	1.05151	1.29545	1.00000	1.29545
1	2	1	0	4	12	0.81845	0.99993	0.81840	1.00000	0.81840
1	2	1	0	5	12	1.42572	0.99828	1.42327	1.00000	1.42327
1	2	1	0	6	12	0.70406	1.00234	0.70570	1.00000	0.70570
1	2	1	0	2	13	1.05494	0.99299	1.04755	1.19700	1.25392
1	2	1	0	3	13	1.07118	0.98327	1.05326	1.12190	1.18165
1	2	1	0	4	13	0.96794	0.99294	0.96111	0.74465	0.71570
1	2	1	0	5	13	0.89429	1.04923	0.93832	1.21538	1.14041
1	2	1	0	6	13	0.87809	0.95256	0.83643	0.82279	0.68821
1	2	1	0	2	14	1.01887	0.98005	0.99855	0.78921	0.78806
1	2	1	0	3	14	0.91941	1.01319	0.93155	1.00000	0.93155
1	2	1	0	4	14	1.02398	0.91547	0.93742	1.36967	1.28396
1	2	1	0	5	14	1.12815	0.99190	1.11902	1.23865	1.38607
1	2	1	0	6	14	1.06458	1.05840	1.12675	0.58943	0.66415

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
1	2	1	1	5	8	1.00053	0.99947	1.00000	1.00000	1.00000
1	2	1	1	6	8	1.08986	1.08183	1.17905	1.25293	1.47727
1	2	1	1	2	9	0.97594	0.99379	0.96989	2.23569	2.16837
1	2	1	1	3	9	1.00087	0.99902	0.99989	0.38885	0.38881
1	2	1	1	4	9	1.12087	0.99488	1.11513	1.00000	1.11513
1	2	1	1	5	9	1.10450	1.00037	1.10491	1.61252	1.78168
1	2	1	1	6	9	0.91371	1.01300	0.92559	0.62015	0.57401
1	2	1	1	2	10	0.95840	1.09223	1.04680	1.17860	1.23375
1	2	1	1	3	10	1.01332	1.00148	1.01482	0.84847	0.86104
1	2	1	1	4	10	1.05941	0.87971	0.93197	3.18391	2.96733
1	2	1	1	5	10	1.26313	0.99664	1.25888	0.34753	0.43750
1	2	1	1	6	10	0.80525	1.00026	0.80546	1.16866	0.94131
1	2	1	1	2	11	1.08170	0.89841	0.97181	2.40144	2.33374
1	2	1	1	3	11	0.89643	1.17123	1.04992	0.41642	0.43721
1	2	1	1	4	11	0.97383	1.16841	1.13784	1.28152	1.45816
1	2	1	1	5	11	1.18732	1.00757	1.19630	1.56543	1.87273
1	2	1	1	6	11	1.20288	0.99528	1.19720	0.64466	0.77179
1	2	1	1	2	12	1.68345	0.60860	1.02455	1.28796	1.31958
1	2	1	1	3	12	2.60439	0.63939	1.66521	0.60520	1.00779
1	2	1	1	4	12	1.42540	0.51212	0.72997	1.25696	0.91754
1	2	1	1	5	12	2.32709	0.56858	1.32313	1.15709	1.53098
1	2	1	1	6	12	1.98125	0.49262	0.97600	0.52282	0.51027
1	2	1	1	2	13	1.05494	0.99299	1.04755	1.19700	1.25392
1	2	1	1	3	13	1.07118	0.98327	1.05326	1.12190	1.18165
1	2	1	1	4	13	0.96794	0.99294	0.96111	0.74465	0.71570
1	2	1	1	5	13	0.89429	1.04923	0.93832	1.21538	1.14041
1	2	1	1	6	13	0.87809	0.95256	0.83643	0.82279	0.68821
1	2	1	1	2	14	1.01887	0.98005	0.99855	0.78921	0.78806
1	2	1	1	3	14	0.91941	1.01319	0.93155	1.00000	0.93155
1	2	1	1	4	14	1.02398	0.91547	0.93742	1.36967	1.28396
1	2	1	1	5	14	1.12815	0.99190	1.11902	1.23865	1.38607
1	2	1	1	6	14	1.06458	1.05840	1.12675	0.58943	0.66415

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
1	2	1	0	2	15	1.01663	0.99963	1.01626	0.66811	0.67897
1	2	1	0	3	15	1.13488	0.92212	1.04650	1.00000	1.04650
1	2	1	0	4	15	0.79108	1.24607	0.98574	1.26417	1.24615
1	2	1	0	5	15	0.99620	0.99238	0.98861	1.47281	1.45603
1	2	1	0	6	15	0.92512	1.21539	1.12437	0.94406	1.06148
1	2	1	0	2	16	1.05354	1.00135	1.05496	1.13147	1.19367
1	2	1	0	3	16	0.98632	0.99882	0.98515	1.07188	1.05596
1	2	1	0	4	16	0.97320	1.00490	0.97797	0.65855	0.64404
1	2	1	0	5	16	0.93264	0.89664	0.83624	1.51766	1.26913
1	2	1	0	6	16	1.12048	0.94152	1.05495	0.98753	1.04179
1	2	1	0	2	17	0.94497	0.99985	0.94482	1.15744	1.09357
1	2	1	0	3	17	1.14918	1.03476	1.18913	1.15833	1.37740
1	2	1	0	4	17	1.01104	0.98151	0.99235	0.62091	0.61616
1	2	1	0	5	17	1.02528	1.06432	1.09123	1.34376	1.46635
1	2	1	0	6	17	1.05065	0.95180	1.00001	0.88354	0.88355
1	2	1	0	2	18	1.03578	0.96546	1.00000	1.00000	1.00000
1	2	1	0	3	18	0.96965	1.08960	1.05653	1.00000	1.05653
1	2	1	0	4	18	0.99848	1.00152	1.00000	1.00000	1.00000
1	2	1	0	5	18	1.03456	1.02086	1.05614	1.00000	1.05614
1	2	1	0	6	18	1.00000	1.00000	1.00000	1.00000	1.00000
1	2	1	0	2	19	1.05878	0.98849	1.04659	1.12284	1.17515
1	2	1	0	3	19	0.98141	1.00289	0.98425	1.01669	1.00068
1	2	1	0	4	19	0.99114	0.99518	0.98637	1.21937	1.20274
1	2	1	0	5	19	0.90980	0.97712	0.88898	0.52148	0.46359
1	2	1	0	6	19	0.95772	1.04415	1.00000	1.00000	1.00000
1	2	1	0	2	20	0.86086	0.99312	0.85494	0.61378	0.52474
1	2	1	0	3	20	1.17859	1.01717	1.19883	1.10977	1.33042
1	2	1	0	4	20	0.98736	1.00000	0.98736	1.66606	1.64500
1	2	1	0	5	20	1.14120	0.99994	1.14112	1.22939	1.40288
1	2	1	0	6	20	0.93482	1.00000	0.93482	0.64757	0.60536
1	2	1	0	2	21	1.02630	0.97553	1.00118	1.37716	1.37878
1	2	1	0	3	21	0.99688	0.99904	0.99592	0.80705	0.80376

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
1	2	1	1	2	15	1.01663	0.99963	1.01626	0.66811	0.67897
1	2	1	1	3	15	1.13488	0.92212	1.04650	1.00000	1.04650
1	2	1	1	4	15	0.79108	1.24607	0.98574	1.26417	1.24615
1	2	1	1	5	15	0.99620	0.99238	0.98861	1.47281	1.45603
1	2	1	1	6	15	0.92512	1.21539	1.12437	0.94406	1.06148
1	2	1	1	2	16	1.05354	1.00135	1.05496	1.13147	1.19367
1	2	1	1	3	16	0.98632	0.99882	0.98515	1.07188	1.05596
1	2	1	1	4	16	0.97320	1.00490	0.97797	0.65855	0.64404
1	2	1	1	5	16	0.93264	0.89664	0.83624	1.51766	1.26913
1	2	1	1	6	16	1.12048	0.94152	1.05495	0.98753	1.04179
1	2	1	1	2	17	0.94497	0.99985	0.94482	1.15744	1.09357
1	2	1	1	3	17	1.14918	1.03476	1.18913	1.15833	1.37740
1	2	1	1	4	17	1.01104	0.98151	0.99235	0.62091	0.61616
1	2	1	1	5	17	1.02528	1.06432	1.09123	1.34376	1.46635
1	2	1	1	6	17	1.05065	0.95180	1.00001	0.88354	0.88355
1	2	1	1	2	18	1.03578	0.96546	1.00000	1.00000	1.00000
1	2	1	1	3	18	0.96965	1.08960	1.05653	1.00000	1.05653
1	2	1	1	4	18	0.99848	1.00152	1.00000	1.00000	1.00000
1	2	1	1	5	18	1.03456	1.02086	1.05614	1.00000	1.05614
1	2	1	1	6	18	1.00000	1.00000	1.00000	1.00000	1.00000
1	2	1	1	2	19	1.05878	0.98849	1.04659	1.12284	1.17515
1	2	1	1	3	19	0.98141	1.00289	0.98425	1.01669	1.00068
1	2	1	1	4	19	0.99114	0.99518	0.98637	1.21937	1.20274
1	2	1	1	5	19	0.90980	0.97712	0.88898	0.52148	0.46359
1	2	1	1	6	19	0.95772	1.04415	1.00000	1.00000	1.00000
1	2	1	1	2	20	0.86086	0.99312	0.85494	0.61378	0.52474
1	2	1	1	3	20	1.17859	1.01717	1.19883	1.10977	1.33042
1	2	1	1	4	20	0.98736	1.00000	0.98736	1.66606	1.64500
1	2	1	1	5	20	1.14120	0.99994	1.14112	1.22939	1.40288
1	2	1	1	6	20	0.93482	1.00000	0.93482	0.64757	0.60536
1	2	1	1	2	21	1.02630	0.97553	1.00118	1.37716	1.37878
1	2	1	1	3	21	0.99688	0.99904	0.99592	0.80705	0.80376

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
1	2	1	0	4	21	0.90629	1.02083	0.92517	0.97115	0.89849
1	2	1	0	5	21	1.02732	0.99933	1.02663	0.87649	0.89983
1	2	1	0	6	21	0.90405	1.00824	0.91150	1.28807	1.17408
1	2	1	0	2	22	0.99407	1.00596	1.00000	1.00000	1.00000
1	2	1	0	3	22	0.95440	1.04777	1.00000	1.00000	1.00000
1	2	1	0	4	22	1.12179	0.89143	1.00000	1.00000	1.00000
1	2	1	0	5	22	1.02847	1.05011	1.08000	1.81549	1.96074
1	2	1	0	6	22	0.90751	0.83588	0.75857	1.03684	0.78652
1	2	1	0	2	23	1.01808	1.00448	1.02264	1.82316	1.86444
1	2	1	0	3	23	1.13739	0.87541	0.99568	1.03382	1.02936
1	2	1	0	4	23	0.95617	0.97860	0.93570	0.53055	0.49644
1	2	1	0	5	23	0.95825	1.04357	1.00000	1.00000	1.00000
1	2	1	0	6	23	0.96371	1.00784	0.97126	1.00000	0.97126
1	2	1	0	2	24	1.01088	0.98924	1.00000	1.00000	1.00000
1	2	1	0	3	24	0.99472	1.00531	1.00000	1.00000	1.00000
1	2	1	0	4	24	1.07158	0.93320	1.00000	1.00000	1.00000
1	2	1	0	5	24	0.98758	1.02276	1.01006	1.00000	1.01006
1	2	1	0	6	24	0.97737	1.02315	1.00000	1.00000	1.00000
1	2	1	0	2	25	0.97180	0.99391	0.96588	0.63846	0.61667
1	2	1	0	3	25	0.85154	0.98832	0.84159	1.33069	1.11990
1	2	1	0	4	25	0.89576	1.06691	0.95570	0.75149	0.71820
1	2	1	0	5	25	0.95705	1.01383	0.97028	1.00000	0.97028
1	2	1	0	6	25	0.84484	1.03347	0.87312	1.76902	1.54457
1	2	1	0	2	26	1.08020	1.00828	1.08915	0.65250	0.71067
1	2	1	0	3	26	1.01128	0.93250	0.94302	1.45503	1.37211
1	2	1	0	4	26	0.95203	0.99427	0.94657	1.22161	1.15634
1	2	1	0	5	26	1.05542	1.01399	1.07018	0.77925	0.83394
1	2	1	0	6	26	1.22877	0.98260	1.20739	0.79040	0.95432
1	2	1	0	2	27	0.97926	1.01055	0.98959	0.57256	0.56661
1	2	1	0	3	27	0.99380	0.99350	0.98733	1.48343	1.46464
1	2	1	0	4	27	0.97350	0.99698	0.97056	0.67411	0.65427
1	2	1	0	5	27	1.03552	1.00868	1.04451	1.30251	1.36048

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
1	2	1	1	4	21	0.90629	1.02083	0.92517	0.97115	0.89849
1	2	1	1	5	21	1.02732	0.99933	1.02663	0.87649	0.89983
1	2	1	1	6	21	0.90405	1.00824	0.91150	1.28807	1.17408
1	2	1	1	2	22	0.99407	1.00596	1.00000	1.00000	1.00000
1	2	1	1	3	22	0.95440	1.04777	1.00000	1.00000	1.00000
1	2	1	1	4	22	1.12179	0.89143	1.00000	1.00000	1.00000
1	2	1	1	5	22	1.02847	1.05011	1.08000	1.81549	1.96074
1	2	1	1	6	22	0.90751	0.83588	0.75857	1.03684	0.78652
1	2	1	1	2	23	1.01808	1.00448	1.02264	1.82316	1.86444
1	2	1	1	3	23	1.13739	0.87541	0.99568	1.03382	1.02936
1	2	1	1	4	23	0.95617	0.97860	0.93570	0.53055	0.49644
1	2	1	1	5	23	0.95825	1.04357	1.00000	1.00000	1.00000
1	2	1	1	6	23	0.96371	1.00784	0.97126	1.00000	0.97126
1	2	1	1	2	24	1.01088	0.98924	1.00000	1.00000	1.00000
1	2	1	1	3	24	0.99472	1.00531	1.00000	1.00000	1.00000
1	2	1	1	4	24	1.07158	0.93320	1.00000	1.00000	1.00000
1	2	1	1	5	24	0.98758	1.02276	1.01006	1.00000	1.01006
1	2	1	1	6	24	0.97737	1.02315	1.00000	1.00000	1.00000
1	2	1	1	2	25	0.97180	0.99391	0.96588	0.63846	0.61667
1	2	1	1	3	25	0.85154	0.98832	0.84159	1.33069	1.11990
1	2	1	1	4	25	0.89576	1.06691	0.95570	0.75149	0.71820
1	2	1	1	5	25	0.95705	1.01383	0.97028	1.00000	0.97028
1	2	1	1	6	25	0.84484	1.03347	0.87312	1.76902	1.54457
1	2	1	1	2	26	1.08020	1.00828	1.08915	0.65250	0.71067
1	2	1	1	3	26	1.01128	0.93250	0.94302	1.45503	1.37211
1	2	1	1	4	26	0.95203	0.99427	0.94657	1.22161	1.15634
1	2	1	1	5	26	1.05542	1.01399	1.07018	0.77925	0.83394
1	2	1	1	6	26	1.22877	0.98260	1.20739	0.79040	0.95432
1	2	1	1	2	27	0.97926	1.01055	0.98959	0.57256	0.56661
1	2	1	1	3	27	0.99380	0.99350	0.98733	1.48343	1.46464
1	2	1	1	4	27	0.97350	0.99698	0.97056	0.67411	0.65427
1	2	1	1	5	27	1.03552	1.00868	1.04451	1.30251	1.36048

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
1	2	1	0	6	27	0.92641	0.99862	0.92513	0.97962	0.90627
1	2	1	0	2	28	0.90565	1.05517	0.95561	1.00000	0.95561
1	2	1	0	3	28	1.00456	0.99546	1.00000	1.00000	1.00000
1	2	1	0	4	28	1.13930	1.05126	1.19770	1.17676	1.40941
1	2	1	0	5	28	0.87554	0.96300	0.84314	0.84979	0.71649
1	2	1	0	6	28	0.91013	0.99215	0.90298	1.22281	1.10417
1	2	1	0	2	29	1.02303	1.02747	1.05113	0.95276	1.00148
1	2	1	0	3	29	1.01677	0.95156	0.96752	0.76005	0.73536
1	2	1	0	4	29	1.03239	1.00629	1.03889	1.00000	1.03889
1	2	1	0	5	29	1.08995	1.00581	1.09628	1.00000	1.09628
1	2	1	0	6	29	1.04684	0.93350	0.97723	1.69031	1.65182
1	2	1	0	2	30	0.92840	0.98630	0.91568	0.83713	0.76655
1	2	1	0	3	30	1.09886	1.01614	1.11659	1.07321	1.19834
1	2	1	0	4	30	0.90302	0.98478	0.88927	1.02543	0.91189
1	2	1	0	5	30	1.09279	1.01192	1.10582	0.83507	0.92344
1	2	1	0	6	30	1.02566	0.98025	1.00540	0.82190	0.82633
1	2	1	0	2	31	0.93335	1.02673	0.95830	1.00000	0.95830
1	2	1	0	3	31	1.00962	0.99448	1.00405	1.00000	1.00405
1	2	1	0	4	31	1.03043	1.05062	1.08259	1.00000	1.08259
1	2	1	0	5	31	1.04792	0.98232	1.02939	1.19944	1.23469
1	2	1	0	6	31	1.32787	1.00072	1.32883	0.83372	1.10787
1	2	1	0	2	32	0.97622	0.97903	0.95574	1.00000	0.95574
1	2	1	0	3	32	1.06071	0.94276	1.00000	1.00000	1.00000
1	2	1	0	4	32	0.97682	1.02373	1.00000	1.00000	1.00000
1	2	1	0	5	32	1.00000	1.00000	1.00000	1.00000	1.00000
1	2	1	0	6	32	1.00000	1.00000	1.00000	1.00000	1.00000
1	2	1	0	2	33	1.00955	0.96477	0.97398	1.06493	1.03722
1	2	1	0	3	33	1.04474	0.97569	1.01934	0.50160	0.51130
1	2	1	0	4	33	1.00608	0.99396	1.00000	1.00000	1.00000
1	2	1	0	5	33	1.00000	1.00000	1.00000	1.00000	1.00000
1	2	1	0	6	33	0.93872	1.03500	0.97157	1.79227	1.74133
1	2	1	0	2	34	0.98768	0.98467	0.97254	0.96670	0.94015

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
1	2	1	1	6	27	0.92641	0.99862	0.92513	0.97962	0.90627
1	2	1	1	2	28	0.90565	1.05517	0.95561	1.00000	0.95561
1	2	1	1	3	28	1.00456	0.99546	1.00000	1.00000	1.00000
1	2	1	1	4	28	1.13930	1.05126	1.19770	1.17676	1.40941
1	2	1	1	5	28	0.87554	0.96300	0.84314	0.84979	0.71649
1	2	1	1	6	28	0.91013	0.99215	0.90298	1.22281	1.10417
1	2	1	1	2	29	1.02303	1.02747	1.05113	0.95276	1.00148
1	2	1	1	3	29	1.01677	0.95156	0.96752	0.76005	0.73536
1	2	1	1	4	29	1.03239	1.00629	1.03889	1.00000	1.03889
1	2	1	1	5	29	1.08995	1.00581	1.09628	1.00000	1.09628
1	2	1	1	6	29	1.04684	0.93350	0.97723	1.69031	1.65182
1	2	1	1	2	30	0.92840	0.98630	0.91568	0.83713	0.76655
1	2	1	1	3	30	1.09886	1.01614	1.11659	1.07321	1.19834
1	2	1	1	4	30	0.90302	0.98478	0.88927	1.02543	0.91189
1	2	1	1	5	30	1.09279	1.01192	1.10582	0.83507	0.92344
1	2	1	1	6	30	1.02566	0.98025	1.00540	0.82190	0.82633
1	2	1	1	2	31	0.93335	1.02673	0.95830	1.00000	0.95830
1	2	1	1	3	31	1.00962	0.99448	1.00405	1.00000	1.00405
1	2	1	1	4	31	1.03043	1.05062	1.08259	1.00000	1.08259
1	2	1	1	5	31	1.04792	0.98232	1.02939	1.19944	1.23469
1	2	1	1	6	31	1.32787	1.00072	1.32883	0.83372	1.10787
1	2	1	1	2	32	0.97622	0.97903	0.95574	1.00000	0.95574
1	2	1	1	3	32	1.06071	0.94276	1.00000	1.00000	1.00000
1	2	1	1	4	32	0.97682	1.02373	1.00000	1.00000	1.00000
1	2	1	1	5	32	1.00000	1.00000	1.00000	1.00000	1.00000
1	2	1	1	6	32	1.00000	1.00000	1.00000	1.00000	1.00000
1	2	1	1	2	33	1.00955	0.96477	0.97398	1.06493	1.03722
1	2	1	1	3	33	1.04474	0.97569	1.01934	0.50160	0.51130
1	2	1	1	4	33	1.00608	0.99396	1.00000	1.00000	1.00000
1	2	1	1	5	33	1.00000	1.00000	1.00000	1.00000	1.00000
1	2	1	1	6	33	0.93872	1.03500	0.97157	1.79227	1.74133
1	2	1	1	2	34	0.98768	0.98467	0.97254	0.96670	0.94015

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
1	2	1	0	3	34	0.93355	1.01241	0.94514	0.59464	0.56201
1	2	1	0	4	34	0.98930	1.00756	0.99677	1.40158	1.39706
1	2	1	0	5	34	0.90550	1.01981	0.92344	0.71348	0.65886
1	2	1	0	6	34	1.22054	0.93797	1.14483	1.00000	1.14483
1	2	1	0	2	35	0.99541	1.02426	1.01956	1.09195	1.11331
1	2	1	0	3	35	0.95733	1.00173	0.95899	0.63095	0.60507
1	2	1	0	4	35	0.96467	0.99547	0.96030	1.14235	1.09700
1	2	1	0	5	35	1.00448	1.00042	1.00490	1.02257	1.02759
1	2	1	0	6	35	0.95085	0.99782	0.94878	1.04979	0.99602
1	2	1	0	2	36	0.73090	1.00140	0.73193	1.00000	0.73193
1	2	1	0	3	36	1.19481	0.80341	0.95992	1.00000	0.95992
1	2	1	0	4	36	1.07567	0.97256	1.04616	1.00000	1.04616
1	2	1	0	5	36	1.11858	1.04052	1.16390	1.00000	1.16390
1	2	1	0	6	36	0.75871	1.02006	0.77393	1.00000	0.77393
1	2	1	0	2	37	0.90779	1.01892	0.92496	1.00000	0.92496
1	2	1	0	3	37	1.01838	0.97199	0.98985	1.23626	1.22371
1	2	1	0	4	37	0.98108	1.00919	0.99009	0.80889	0.80088
1	2	1	0	5	37	0.92133	0.98416	0.90673	1.25001	1.13342
1	2	1	0	6	37	1.10932	0.99718	1.10619	0.90518	1.00130
1	2	1	0	2	38	0.98052	1.02840	1.00836	1.12592	1.13533
1	2	1	0	3	38	1.04661	0.99907	1.04564	0.97733	1.02194
1	2	1	0	4	38	0.91007	0.99670	0.90706	0.58586	0.53141
1	2	1	0	5	38	0.98634	0.99920	0.98555	1.54453	1.52222
1	2	1	0	6	38	0.79899	0.99726	0.79681	1.16521	0.92844
1	2	1	0	2	39	0.95420	1.00000	0.95420	0.93890	0.89590
1	2	1	0	3	39	0.93004	1.09482	1.01823	1.00000	1.01823
1	2	1	0	4	39	1.10208	1.01056	1.11371	1.64751	1.83485
1	2	1	0	5	39	1.00588	1.00911	1.01504	0.76882	0.78039
1	2	1	0	6	39	0.91896	1.07865	0.99123	1.36911	1.35711
1	2	1	0	2	40	0.87742	0.98547	0.86467	0.71621	0.61929
1	2	1	0	3	40	0.96537	0.98362	0.94956	0.85389	0.81082
1	2	1	0	4	40	0.93225	1.07843	1.00537	1.17952	1.18585

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
1	2	1	1	3	34	0.93355	1.01241	0.94514	0.59464	0.56201
1	2	1	1	4	34	0.98930	1.00756	0.99677	1.40158	1.39706
1	2	1	1	5	34	0.90550	1.01981	0.92344	0.71348	0.65886
1	2	1	1	6	34	1.22054	0.93797	1.14483	1.00000	1.14483
1	2	1	1	2	35	0.99541	1.02426	1.01956	1.09195	1.11331
1	2	1	1	3	35	0.95733	1.00173	0.95899	0.63095	0.60507
1	2	1	1	4	35	0.96467	0.99547	0.96030	1.14235	1.09700
1	2	1	1	5	35	1.00448	1.00042	1.00490	1.02257	1.02759
1	2	1	1	6	35	0.95085	0.99782	0.94878	1.04979	0.99602
1	2	1	1	2	36	0.73090	1.00140	0.73193	1.00000	0.73193
1	2	1	1	3	36	1.19481	0.80341	0.95992	1.00000	0.95992
1	2	1	1	4	36	1.07567	0.97256	1.04616	1.00000	1.04616
1	2	1	1	5	36	1.11858	1.04052	1.16390	1.00000	1.16390
1	2	1	1	6	36	0.75871	1.02006	0.77393	1.00000	0.77393
1	2	1	1	2	37	0.90779	1.01892	0.92496	1.00000	0.92496
1	2	1	1	3	37	1.01838	0.97199	0.98985	1.23626	1.22371
1	2	1	1	4	37	0.98108	1.00919	0.99009	0.80889	0.80088
1	2	1	1	5	37	0.92133	0.98416	0.90673	1.25001	1.13342
1	2	1	1	6	37	1.10932	0.99718	1.10619	0.90518	1.00130
1	2	1	1	2	38	0.98052	1.02840	1.00836	1.12592	1.13533
1	2	1	1	3	38	1.04661	0.99907	1.04564	0.97733	1.02194
1	2	1	1	4	38	0.91007	0.99670	0.90706	0.58586	0.53141
1	2	1	1	5	38	0.98634	0.99920	0.98555	1.54453	1.52222
1	2	1	1	6	38	0.79899	0.99726	0.79681	1.16521	0.92844
1	2	1	1	2	39	0.95420	1.00000	0.95420	0.93890	0.89590
1	2	1	1	3	39	0.93004	1.09482	1.01823	1.00000	1.01823
1	2	1	1	4	39	1.10208	1.01056	1.11371	1.64751	1.83485
1	2	1	1	5	39	1.00588	1.00911	1.01504	0.76882	0.78039
1	2	1	1	6	39	0.91896	1.07865	0.99123	1.36911	1.35711
1	2	1	1	2	40	0.87742	0.98547	0.86467	0.71621	0.61929
1	2	1	1	3	40	0.96537	0.98362	0.94956	0.85389	0.81082
1	2	1	1	4	40	0.93225	1.07843	1.00537	1.17952	1.18585

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
1	2	1	0	5	40	0.90802	1.00300	0.91075	1.78767	1.62811
1	2	1	0	6	40	1.20324	0.98801	1.18880	0.47425	0.56379
1	2	1	0	2	41	1.06981	1.00000	1.06981	1.04277	1.11557
1	2	1	0	3	41	0.93393	0.99570	0.92991	1.27656	1.18709
1	2	1	0	4	41	0.94617	1.04879	0.99233	0.86129	0.85469
1	2	1	0	5	41	1.10865	0.97293	1.07865	0.64362	0.69424
1	2	1	0	6	41	0.96727	0.95315	0.92196	1.00000	0.92196
1	2	1	0	2	42	0.95516	1.00265	0.95770	0.63262	0.60586
1	2	1	0	3	42	1.02740	1.00000	1.02740	0.83142	0.85419
1	2	1	0	4	42	1.00141	1.00000	1.00141	2.06291	2.06583
1	2	1	0	5	42	1.11186	1.00000	1.11186	0.59711	0.66390
1	2	1	0	6	42	0.87169	1.00000	0.87169	1.14907	1.00163
1	2	1	0	2	43	0.94562	1.01053	0.95558	1.00000	0.95558
1	2	1	0	3	43	1.21412	0.98496	1.19586	1.00000	1.19586
1	2	1	0	4	43	1.01796	1.01957	1.03788	1.36626	1.41802
1	2	1	0	5	43	1.06428	1.00081	1.06513	0.73193	0.77960
1	2	1	0	6	43	1.00128	1.00000	1.00128	1.59055	1.59259
1	2	1	0	2	44	1.03979	1.00799	1.04810	0.82096	0.86045
1	2	1	0	3	44	1.05916	1.00160	1.06086	1.46783	1.55716
1	2	1	0	4	44	0.98431	0.99657	0.98093	0.88170	0.86489
1	2	1	0	5	44	0.92560	0.99668	0.92253	1.28035	1.18117
1	2	1	0	6	44	1.01115	1.01290	1.02419	0.60349	0.61809
1	2	1	0	2	45	1.64776	1.01674	1.67534	0.70906	1.18792
1	2	1	0	3	45	0.58100	0.99026	0.57534	1.68644	0.97027
1	2	1	0	4	45	0.95942	1.00051	0.95991	1.12812	1.08290
1	2	1	0	5	45	1.07397	0.99933	1.07325	0.82752	0.88813
1	2	1	0	6	45	1.06060	1.00349	1.06431	1.08775	1.15770
1	2	1	0	2	46	0.97585	1.00308	0.97886	0.80897	0.79187
1	2	1	0	3	46	1.08856	1.02318	1.11380	1.06158	1.18239
1	2	1	0	4	46	1.00974	0.98929	0.99893	0.94199	0.94099
1	2	1	0	5	46	0.65166	0.87110	0.56766	1.36378	0.77417
1	2	1	0	6	46	1.24226	0.95603	1.18763	0.73326	0.87084

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
1	2	1	1	5	40	0.90802	1.00300	0.91075	1.78767	1.62811
1	2	1	1	6	40	1.20324	0.98801	1.18880	0.47425	0.56379
1	2	1	1	2	41	1.06981	1.00000	1.06981	1.04277	1.11557
1	2	1	1	3	41	0.93393	0.99570	0.92991	1.27656	1.18709
1	2	1	1	4	41	0.94617	1.04879	0.99233	0.86129	0.85469
1	2	1	1	5	41	1.10865	0.97293	1.07865	0.64362	0.69424
1	2	1	1	6	41	0.96727	0.95315	0.92196	1.00000	0.92196
1	2	1	1	2	42	0.95516	1.00265	0.95770	0.63262	0.60586
1	2	1	1	3	42	1.02740	1.00000	1.02740	0.83142	0.85419
1	2	1	1	4	42	1.00141	1.00000	1.00141	2.06291	2.06583
1	2	1	1	5	42	1.11186	1.00000	1.11186	0.59711	0.66390
1	2	1	1	6	42	0.87169	1.00000	0.87169	1.14907	1.00163
1	2	1	1	2	43	0.94562	1.01053	0.95558	1.00000	0.95558
1	2	1	1	3	43	1.21412	0.98496	1.19586	1.00000	1.19586
1	2	1	1	4	43	1.01796	1.01957	1.03788	1.36626	1.41802
1	2	1	1	5	43	1.06428	1.00081	1.06513	0.73193	0.77960
1	2	1	1	6	43	1.00128	1.00000	1.00128	1.59055	1.59259
1	2	1	1	2	44	1.03979	1.00799	1.04810	0.82096	0.86045
1	2	1	1	3	44	1.05916	1.00160	1.06086	1.46783	1.55716
1	2	1	1	4	44	0.98431	0.99657	0.98093	0.88170	0.86489
1	2	1	1	5	44	0.92560	0.99668	0.92253	1.28035	1.18117
1	2	1	1	6	44	1.01115	1.01290	1.02419	0.60349	0.61809
1	2	1	1	2	45	1.64776	1.01674	1.67534	0.70906	1.18792
1	2	1	1	3	45	0.58100	0.99026	0.57534	1.68644	0.97027
1	2	1	1	4	45	0.95942	1.00051	0.95991	1.12812	1.08290
1	2	1	1	5	45	1.07397	0.99933	1.07325	0.82752	0.88813
1	2	1	1	6	45	1.06060	1.00349	1.06431	1.08775	1.15770
1	2	1	1	2	46	0.97585	1.00308	0.97886	0.80897	0.79187
1	2	1	1	3	46	1.08856	1.02318	1.11380	1.06158	1.18239
1	2	1	1	4	46	1.00974	0.98929	0.99893	0.94199	0.94099
1	2	1	1	5	46	0.65166	0.87110	0.56766	1.36378	0.77417
1	2	1	1	6	46	1.24226	0.95603	1.18763	0.73326	0.87084

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
1	2	1	0	2	47	1.03822	1.04406	1.08396	0.69240	0.75053
1	2	1	0	3	47	0.99952	1.06790	1.06739	1.00000	1.06739
1	2	1	0	4	47	0.99217	1.00013	0.99230	1.00000	0.99230
1	2	1	0	5	47	0.98750	1.01265	1.00000	1.00000	1.00000
1	2	1	0	6	47	1.01770	0.98261	1.00000	1.00000	1.00000
1	2	1	0	2	48	0.96351	1.03787	1.00000	1.00000	1.00000
1	2	1	0	3	48	0.92071	1.08612	1.00000	1.00000	1.00000
1	2	1	0	4	48	0.86492	0.83483	0.72206	1.14066	0.82362
1	2	1	0	5	48	1.02338	0.99831	1.02165	0.87669	0.89567
1	2	1	0	6	48	0.96856	1.02314	0.99097	1.00000	0.99097
1	2	1	0	2	49	0.87393	1.00154	0.87527	1.19505	1.04599
1	2	1	0	3	49	1.06976	0.99645	1.06596	0.83678	0.89197
1	2	1	0	4	49	1.01297	0.97978	0.99249	1.00000	0.99249
1	2	1	0	5	49	1.04145	1.03301	1.07583	1.00000	1.07583
1	2	1	0	6	49	1.02974	1.01879	1.04908	1.00050	1.04961
1	2	1	0	2	50	1.14819	1.00388	1.15265	0.99091	1.14217
1	2	1	0	3	50	1.02618	0.98828	1.01415	0.93932	0.95262
1	2	1	0	4	50	0.92060	0.98532	0.90709	0.97699	0.88622
1	2	1	0	5	50	1.10938	0.99909	1.10837	1.00000	1.10837
1	2	1	0	6	50	0.89991	1.01126	0.91004	1.24087	1.12924
1	1	2	0	2	1	0.94302	1.01171	0.95406	0.92886	0.88619
1	1	2	0	3	1	1.04397	1.00253	1.04661	1.54996	1.62221
1	1	2	0	4	1	0.99664	0.99412	0.99078	0.72681	0.72011
1	1	2	0	5	1	0.97941	0.99690	0.97637	0.79798	0.77913
1	1	2	0	6	1	1.18405	0.97334	1.15248	1.37274	1.58206
1	1	2	0	2	2	1.03120	0.98200	1.01265	1.20236	1.21757
1	1	2	0	3	2	1.04997	0.96423	1.01242	1.48288	1.50130
1	1	2	0	4	2	0.93026	1.00381	0.93380	0.53596	0.50048
1	1	2	0	5	2	0.97361	1.02005	0.99314	1.28706	1.27822
1	1	2	0	6	2	0.97553	1.01135	0.98660	1.01839	1.00474
1	1	2	0	2	3	1.08880	1.00000	1.08880	1.01687	1.10717
1	1	2	0	3	3	0.94576	1.00000	0.94576	0.98341	0.93007

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
1	2	1	1	2	47	1.03822	1.04406	1.08396	0.69240	0.75053
1	2	1	1	3	47	0.99952	1.06790	1.06739	1.00000	1.06739
1	2	1	1	4	47	0.99217	1.00013	0.99230	1.00000	0.99230
1	2	1	1	5	47	0.98750	1.01265	1.00000	1.00000	1.00000
1	2	1	1	6	47	1.01770	0.98261	1.00000	1.00000	1.00000
1	2	1	1	2	48	0.96351	1.03787	1.00000	1.00000	1.00000
1	2	1	1	3	48	0.92071	1.08612	1.00000	1.00000	1.00000
1	2	1	1	4	48	0.86492	0.83483	0.72206	1.14066	0.82362
1	2	1	1	5	48	1.02338	0.99831	1.02165	0.87669	0.89567
1	2	1	1	6	48	0.96856	1.02314	0.99097	1.00000	0.99097
1	2	1	1	2	49	0.87393	1.00154	0.87527	1.19505	1.04599
1	2	1	1	3	49	1.06976	0.99645	1.06596	0.83678	0.89197
1	2	1	1	4	49	1.01297	0.97978	0.99249	1.00000	0.99249
1	2	1	1	5	49	1.04145	1.03301	1.07583	1.00000	1.07583
1	2	1	1	6	49	1.02974	1.01879	1.04908	1.00050	1.04961
1	2	1	1	2	50	1.14819	1.00388	1.15265	0.99091	1.14217
1	2	1	1	3	50	1.02618	0.98828	1.01415	0.93932	0.95262
1	2	1	1	4	50	0.92060	0.98532	0.90709	0.97699	0.88622
1	2	1	1	5	50	1.10938	0.99909	1.10837	1.00000	1.10837
1	2	1	1	6	50	0.89991	1.01126	0.91004	1.24087	1.12924
1	1	2	1	2	1	1.38687	0.98771	1.36983	0.41424	0.56744
1	1	2	1	3	1	0.88108	1.00536	0.88580	2.91929	2.58590
1	1	2	1	4	1	0.98227	0.99962	0.98189	0.75370	0.74005
1	1	2	1	5	1	0.90985	0.99469	0.90502	0.71485	0.64695
1	1	2	1	6	1	0.87180	0.97919	0.85365	2.38094	2.03250
1	1	2	1	2	2	1.12018	0.98731	1.10596	0.14827	0.16398
1	1	2	1	3	2	0.90214	0.99264	0.89550	2.51068	2.24830
1	1	2	1	4	2	1.02771	0.96195	0.98860	1.45133	1.43479
1	1	2	1	5	2	0.95557	0.98274	0.93907	1.73317	1.62757
1	1	2	1	6	2	0.73394	1.00186	0.73530	0.53676	0.39468
1	1	2	1	2	3	1.05518	1.05047	1.10843	2.88835	3.20155
1	1	2	1	3	3	0.93510	0.99857	0.93376	0.29063	0.27138

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
1	1	2	0	4	3	1.03650	1.02170	1.05898	1.00000	1.05898
1	1	2	0	5	3	0.91314	1.00000	0.91314	1.00000	0.91314
1	1	2	0	6	3	0.94875	1.00204	0.95068	1.00000	0.95068
1	1	2	0	2	4	0.99978	0.95682	0.95660	1.41996	1.35834
1	1	2	0	3	4	1.05490	0.99732	1.05207	1.00833	1.06084
1	1	2	0	4	4	0.90080	0.92757	0.83556	0.95261	0.79596
1	1	2	0	5	4	1.12239	0.94712	1.06303	0.93450	0.99340
1	1	2	0	6	4	0.93623	0.99904	0.93533	0.83863	0.78440
1	1	2	0	2	5	0.93827	1.03195	0.96825	2.06183	1.99637
1	1	2	0	3	5	1.08528	0.99621	1.08116	0.62785	0.67881
1	1	2	0	4	5	0.87170	1.02381	0.89245	0.73857	0.65914
1	1	2	0	5	5	0.74245	1.08341	0.80438	1.91474	1.54017
1	1	2	0	6	5	1.17346	1.00210	1.17592	0.84322	0.99156
1	1	2	0	2	6	0.98397	0.99987	0.98384	1.00179	0.98560
1	1	2	0	3	6	1.11540	0.99988	1.11527	1.02014	1.13773
1	1	2	0	4	6	0.98763	0.99062	0.97836	1.08846	1.06491
1	1	2	0	5	6	0.89408	0.99916	0.89334	1.05609	0.94344
1	1	2	0	6	6	1.00583	1.01542	1.02135	0.95315	0.97350
1	1	2	0	2	7	0.88418	0.99321	0.87817	0.99295	0.87198
1	1	2	0	3	7	1.01660	1.02153	1.03849	1.33238	1.38367
1	1	2	0	4	7	0.95402	1.01234	0.96579	0.95604	0.92333
1	1	2	0	5	7	1.01890	1.03078	1.05027	0.78505	0.82451
1	1	2	0	6	7	0.89546	1.04770	0.93818	1.46777	1.37703
1	1	2	0	2	8	0.99456	0.95406	0.94886	0.58729	0.55726
1	1	2	0	3	8	0.92054	0.97409	0.89669	2.51203	2.25252
1	1	2	0	4	8	0.94540	0.99915	0.94460	0.38342	0.36218
1	1	2	0	5	8	0.95694	0.99829	0.95531	1.23493	1.17974
1	1	2	0	6	8	1.18287	1.00925	1.19381	0.83250	0.99385
1	1	2	0	2	9	1.02457	0.94556	0.96879	1.21693	1.17895
1	1	2	0	3	9	1.02462	1.02271	1.04789	0.72729	0.76212
1	1	2	0	4	9	0.94260	1.00749	0.94966	1.00000	0.94966
1	1	2	0	5	9	0.93372	1.03105	0.96271	1.51453	1.45805

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
1	1	2	1	4	3	1.00701	1.07293	1.08045	0.43905	0.47437
1	1	2	1	5	3	0.74305	1.20380	0.89449	9.87062	8.82912
1	1	2	1	6	3	0.70605	1.00284	0.70805	1.45287	1.02871
1	1	2	1	2	4	1.15882	0.97221	1.12661	0.22150	0.24954
1	1	2	1	3	4	1.02970	0.97831	1.00737	0.87870	0.88518
1	1	2	1	4	4	0.89386	0.93572	0.83640	3.71466	3.10693
1	1	2	1	5	4	1.13691	0.96156	1.09321	0.31870	0.34840
1	1	2	1	6	4	0.71370	1.01611	0.72519	1.31545	0.95396
1	1	2	1	2	5	1.11040	1.10671	1.22888	11.81431	14.51842
1	1	2	1	3	5	0.95209	1.04927	0.99900	0.11015	0.11004
1	1	2	1	4	5	0.87254	1.02123	0.89107	0.42991	0.38308
1	1	2	1	5	5	0.81015	1.13402	0.91873	4.73013	4.34572
1	1	2	1	6	5	0.83513	1.00822	0.84200	1.15890	0.97579
1	1	2	1	2	6	1.08722	0.99769	1.08470	0.88206	0.95678
1	1	2	1	3	6	1.05087	1.00008	1.05095	1.13279	1.19051
1	1	2	1	4	6	1.13709	1.02808	1.16902	0.77301	0.90366
1	1	2	1	5	6	0.86888	0.99455	0.86414	0.78830	0.68121
1	1	2	1	6	6	0.69982	1.00348	0.70226	1.25400	0.88064
1	1	2	1	2	7	1.06693	1.03523	1.10452	1.20344	1.32923
1	1	2	1	3	7	0.93588	1.03550	0.96911	0.91980	0.89138
1	1	2	1	4	7	1.01490	1.00260	1.01753	0.55027	0.55991
1	1	2	1	5	7	0.96249	0.99512	0.95780	1.41584	1.35609
1	1	2	1	6	7	0.80835	1.00416	0.81171	0.92200	0.74839
1	1	2	1	2	8	1.16420	1.00409	1.16897	2.13653	2.49754
1	1	2	1	3	8	0.80414	1.02384	0.82332	0.69958	0.57598
1	1	2	1	4	8	0.91117	0.99064	0.90264	0.72931	0.65830
1	1	2	1	5	8	1.12563	1.00254	1.12848	0.90848	1.02520
1	1	2	1	6	8	0.83795	0.99040	0.82990	3.39341	2.81619
1	1	2	1	2	9	1.23349	0.99084	1.22219	1.70867	2.08832
1	1	2	1	3	9	0.85579	1.01547	0.86902	0.22683	0.19712
1	1	2	1	4	9	0.91318	1.03014	0.94070	1.32778	1.24905
1	1	2	1	5	9	1.17394	0.99939	1.17322	1.46826	1.72259

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
1	1	2	0	6	9	1.04571	1.01885	1.06542	0.66027	0.70347
1	1	2	0	2	10	1.01496	1.02293	1.03823	1.45632	1.51199
1	1	2	0	3	10	1.00084	1.00868	1.00952	0.68666	0.69320
1	1	2	0	4	10	0.93782	1.00137	0.93911	3.29427	3.09368
1	1	2	0	5	10	1.20440	1.00349	1.20861	0.36233	0.43791
1	1	2	0	6	10	0.68070	1.00483	0.68399	1.35299	0.92543
1	1	2	0	2	11	1.02682	1.00070	1.02753	1.92997	1.98311
1	1	2	0	3	11	0.82484	1.01337	0.83587	0.50683	0.42364
1	1	2	0	4	11	0.94976	1.02504	0.97354	1.28586	1.25183
1	1	2	0	5	11	0.92823	1.03316	0.95901	1.49733	1.43596
1	1	2	0	6	11	1.38754	1.00768	1.39820	0.66983	0.93656
1	1	2	0	2	12	1.26512	1.00000	1.26512	0.70250	0.88875
1	1	2	0	3	12	1.06888	1.00256	1.07162	1.75296	1.87851
1	1	2	0	4	12	0.85443	1.00000	0.85443	0.67691	0.57837
1	1	2	0	5	12	1.04915	1.00000	1.04915	1.58673	1.66472
1	1	2	0	6	12	0.95541	1.00000	0.95541	0.61787	0.59032
1	1	2	0	2	13	1.50505	1.00242	1.50870	1.24723	1.88169
1	1	2	0	3	13	1.02563	1.00691	1.03272	1.19494	1.23404
1	1	2	0	4	13	0.86674	1.00413	0.87032	0.67097	0.58396
1	1	2	0	5	13	0.87576	1.02137	0.89447	1.39119	1.24438
1	1	2	0	6	13	0.84616	1.00011	0.84625	1.17134	0.99124
1	1	2	0	2	14	0.99767	1.00241	1.00008	0.87122	0.87129
1	1	2	0	3	14	1.01036	0.99317	1.00346	0.80162	0.80440
1	1	2	0	4	14	1.00838	1.00927	1.01774	1.47050	1.49658
1	1	2	0	5	14	0.93959	0.99981	0.93941	1.49645	1.40578
1	1	2	0	6	14	1.08217	0.98084	1.06144	0.59285	0.62928
1	1	2	0	2	15	0.96047	0.99728	0.95786	0.76763	0.73528
1	1	2	0	3	15	0.81483	0.99702	0.81241	0.97604	0.79294
1	1	2	0	4	15	1.10075	1.12368	1.23689	1.16152	1.43667
1	1	2	0	5	15	0.84909	1.02918	0.87387	1.31710	1.15097
1	1	2	0	6	15	0.97399	1.09032	1.06196	0.96025	1.01975
1	1	2	0	2	16	0.95454	0.99381	0.94863	1.23944	1.17577

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
1	1	2	1	6	9	0.75056	0.98680	0.74066	3.36493	2.49226
1	1	2	1	2	10	1.24037	0.99930	1.23950	5.85999	7.26348
1	1	2	1	3	10	0.96847	1.00981	0.97797	0.09693	0.09480
1	1	2	1	4	10	0.94187	0.99345	0.93570	3.14113	2.93915
1	1	2	1	5	10	1.09230	1.04240	1.13862	0.46356	0.52782
1	1	2	1	6	10	0.52335	1.01065	0.52892	2.56383	1.35607
1	1	2	1	2	11	1.17283	1.01172	1.18657	1.76482	2.09408
1	1	2	1	3	11	0.81607	1.01927	0.83180	2.28049	1.89691
1	1	2	1	4	11	0.98211	1.00838	0.99034	0.39770	0.39385
1	1	2	1	5	11	1.19790	1.00065	1.19868	1.46167	1.75208
1	1	2	1	6	11	0.95373	1.00504	0.95854	1.33354	1.27825
1	1	2	1	2	12	2.61892	0.77072	2.01847	1.00000	2.01847
1	1	2	1	3	12	0.26895	0.30918	0.08315	1.00000	0.08315
1	1	2	1	4	12	0.75909	0.65591	0.49790	1.00000	0.49790
1	1	2	1	5	12	3.60698	0.71057	2.56299	1.00000	2.56299
1	1	2	1	6	12	0.86937	0.70380	0.61186	1.00000	0.61186
1	1	2	1	2	13	1.85195	0.97837	1.81190	0.97892	1.77372
1	1	2	1	3	13	0.90585	1.02766	0.93091	2.85922	2.66167
1	1	2	1	4	13	0.87243	0.98070	0.85560	1.00849	0.86286
1	1	2	1	5	13	0.86417	1.00721	0.87040	0.82187	0.71536
1	1	2	1	6	13	0.72263	1.02880	0.74344	3.43435	2.55323
1	1	2	1	2	14	1.14513	1.01115	1.15789	0.95985	1.11141
1	1	2	1	3	14	1.06302	0.99984	1.06285	0.87260	0.92745
1	1	2	1	4	14	1.04942	1.03571	1.08690	0.73398	0.79776
1	1	2	1	5	14	1.02669	0.99896	1.02563	1.16639	1.19628
1	1	2	1	6	14	0.77692	0.98952	0.76878	2.10901	1.62136
1	1	2	1	2	15	1.32698	0.99664	1.32253	0.51924	0.68671
1	1	2	1	3	15	0.78356	0.96201	0.75379	6.13712	4.62607
1	1	2	1	4	15	1.19370	1.06759	1.27438	0.36952	0.47092
1	1	2	1	5	15	0.85655	1.00960	0.86478	2.04949	1.77235
1	1	2	1	6	15	0.90605	1.00526	0.91082	0.38791	0.35331
1	1	2	1	2	16	1.09123	1.00998	1.10211	1.37806	1.51877

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
1	1	2	0	3	16	1.04846	1.00495	1.05365	0.97280	1.02499
1	1	2	0	4	16	0.97664	0.99687	0.97358	0.84911	0.82667
1	1	2	0	5	16	0.79426	1.01358	0.80505	1.32764	1.06882
1	1	2	0	6	16	1.08963	1.02297	1.11466	0.90616	1.01006
1	1	2	0	2	17	0.96734	1.00702	0.97414	1.05601	1.02870
1	1	2	0	3	17	1.09923	1.01445	1.11512	1.16460	1.29867
1	1	2	0	4	17	0.93124	0.99653	0.92801	0.66348	0.61572
1	1	2	0	5	17	1.01960	0.99235	1.01181	1.34612	1.36201
1	1	2	0	6	17	0.97837	0.99317	0.97169	0.90028	0.87479
1	1	2	0	2	18	0.96867	0.99306	0.96195	0.79784	0.76748
1	1	2	0	3	18	0.98296	1.00073	0.98368	1.05305	1.03586
1	1	2	0	4	18	0.97341	0.99219	0.96581	0.94962	0.91716
1	1	2	0	5	18	1.13623	0.98427	1.11836	1.00000	1.11836
1	1	2	0	6	18	0.95859	0.97738	0.93691	1.00000	0.93691
1	1	2	0	2	19	0.95086	1.02296	0.97269	1.06620	1.03708
1	1	2	0	3	19	0.94599	0.98090	0.92792	1.02259	0.94888
1	1	2	0	4	19	1.03232	1.00822	1.04081	0.91607	0.95345
1	1	2	0	5	19	0.56306	1.01489	0.57145	0.73836	0.42193
1	1	2	0	6	19	0.53540	1.05279	0.56366	1.00000	0.56366
1	1	2	0	2	20	0.90433	0.99864	0.90310	0.57906	0.52295
1	1	2	0	3	20	1.08470	1.00000	1.08470	1.31430	1.42563
1	1	2	0	4	20	1.12070	0.97865	1.09677	1.32644	1.45480
1	1	2	0	5	20	0.77185	1.06764	0.82405	1.42921	1.17774
1	1	2	0	6	20	1.08056	1.04881	1.13331	0.61955	0.70214
1	1	2	0	2	21	1.00685	1.02243	1.02944	1.35436	1.39422
1	1	2	0	3	21	1.08411	1.00573	1.09032	0.88808	0.96829
1	1	2	0	4	21	0.88929	0.98562	0.87649	0.81078	0.71065
1	1	2	0	5	21	0.90698	0.98195	0.89061	1.12401	1.00106
1	1	2	0	6	21	0.94013	0.99863	0.93884	1.13805	1.06844
1	1	2	0	2	22	0.94372	0.99449	0.93852	1.42952	1.34163
1	1	2	0	3	22	0.91396	1.00962	0.92276	0.65688	0.60614
1	1	2	0	4	22	1.03983	0.99914	1.03894	1.06266	1.10404

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
1	1	2	1	3	16	0.98593	1.00956	0.99536	0.57308	0.57042
1	1	2	1	4	16	1.25885	0.92735	1.16740	0.09054	0.10570
1	1	2	1	5	16	0.78692	0.96360	0.75828	12.03049	9.12246
1	1	2	1	6	16	0.75533	1.02469	0.77398	0.23852	0.18461
1	1	2	1	2	17	1.16193	0.99917	1.16097	0.90362	1.04907
1	1	2	1	3	17	0.98020	1.03475	1.01427	0.75619	0.76697
1	1	2	1	4	17	0.95186	1.00346	0.95516	0.73557	0.70258
1	1	2	1	5	17	1.02178	1.01210	1.03414	0.79302	0.82009
1	1	2	1	6	17	0.72717	0.97969	0.71240	2.08139	1.48278
1	1	2	1	2	18	1.18518	1.01323	1.20086	1.55578	1.86828
1	1	2	1	3	18	0.88263	1.03711	0.91539	0.95660	0.87566
1	1	2	1	4	18	0.98997	1.00175	0.99171	0.87418	0.86693
1	1	2	1	5	18	0.96205	1.02863	0.98959	0.49589	0.49073
1	1	2	1	6	18	0.78514	1.03547	0.81299	1.80322	1.46600
1	1	2	1	2	19	1.25025	0.97586	1.22007	2.16671	2.64354
1	1	2	1	3	19	0.83678	0.99991	0.83670	1.34391	1.12446
1	1	2	1	4	19	1.10551	1.01753	1.12489	1.43703	1.61650
1	1	2	1	5	19	0.57904	0.99411	0.57564	0.35473	0.20419
1	1	2	1	6	19	0.38083	1.04721	0.39880	0.85655	0.34160
1	1	2	1	2	20	1.10403	0.98465	1.08708	0.51438	0.55917
1	1	2	1	3	20	1.05472	0.97767	1.03117	1.15732	1.19339
1	1	2	1	4	20	1.06246	0.98144	1.04274	2.11115	2.20137
1	1	2	1	5	20	0.81693	1.02339	0.83603	2.04542	1.71004
1	1	2	1	6	20	0.92055	1.05283	0.96918	0.40356	0.39112
1	1	2	1	2	21	1.22178	1.03788	1.26806	3.07619	3.90080
1	1	2	1	3	21	0.93624	1.02534	0.95997	0.29703	0.28514
1	1	2	1	4	21	0.88468	0.98895	0.87491	1.30798	1.14436
1	1	2	1	5	21	0.93730	0.99847	0.93587	0.89973	0.84203
1	1	2	1	6	21	0.62608	1.00712	0.63053	1.33051	0.83893
1	1	2	1	2	22	1.30514	1.00281	1.30880	0.79104	1.03532
1	1	2	1	3	22	0.84393	0.98908	0.83472	1.92618	1.60782
1	1	2	1	4	22	1.07604	0.95821	1.03107	0.65688	0.67729

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
1	1	2	0	5	22	0.94658	0.97358	0.92157	1.63421	1.50603
1	1	2	0	6	22	1.09836	0.94456	1.03747	0.69906	0.72525
1	1	2	0	2	23	1.08559	1.02944	1.11755	1.50583	1.68283
1	1	2	0	3	23	1.04627	1.00618	1.05274	0.85635	0.90151
1	1	2	0	4	23	0.84729	0.99922	0.84664	0.77549	0.65656
1	1	2	0	5	23	0.90565	1.04900	0.95002	1.06243	1.00933
1	1	2	0	6	23	0.92057	0.98729	0.90887	1.00463	0.91307
1	1	2	0	2	24	1.03220	1.03849	1.07192	1.00000	1.07192
1	1	2	0	3	24	1.01633	1.04023	1.05721	1.00000	1.05721
1	1	2	0	4	24	0.88713	1.04283	0.92513	1.00000	0.92513
1	1	2	0	5	24	1.33952	1.02544	1.37360	1.00000	1.37360
1	1	2	0	6	24	0.91922	1.11461	1.02457	1.00000	1.02457
1	1	2	0	2	25	1.00553	1.00737	1.01294	0.68176	0.69058
1	1	2	0	3	25	0.93585	1.01935	0.95396	1.14817	1.09531
1	1	2	0	4	25	0.96376	1.02717	0.98995	0.96515	0.95545
1	1	2	0	5	25	1.09914	1.00000	1.09914	0.90240	0.99187
1	1	2	0	6	25	0.95173	1.00254	0.95415	1.62275	1.54834
1	1	2	0	2	26	0.99619	0.99527	0.99148	0.77931	0.77267
1	1	2	0	3	26	1.11081	0.96025	1.06666	1.19900	1.27891
1	1	2	0	4	26	0.97745	1.00633	0.98364	1.26164	1.24100
1	1	2	0	5	26	0.92870	0.99356	0.92272	0.96978	0.89483
1	1	2	0	6	26	1.07908	0.99619	1.07497	0.93636	1.00655
1	1	2	0	2	27	0.92480	0.97021	0.89725	0.58137	0.52163
1	1	2	0	3	27	1.05295	1.06443	1.12079	1.27253	1.42624
1	1	2	0	4	27	0.94922	1.00217	0.95128	0.78584	0.74755
1	1	2	0	5	27	0.99783	0.99939	0.99723	1.33208	1.32839
1	1	2	0	6	27	1.02359	0.98055	1.00368	0.93857	0.94203
1	1	2	0	2	28	0.93130	1.00680	0.93763	1.11154	1.04222
1	1	2	0	3	28	1.02725	1.00070	1.02797	0.73128	0.75174
1	1	2	0	4	28	0.93628	0.99521	0.93179	1.24952	1.16429
1	1	2	0	5	28	1.10162	0.99631	1.09756	0.76350	0.83799
1	1	2	0	6	28	0.75601	1.00652	0.76094	1.36315	1.03727

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
1	1	2	1	5	22	0.98456	1.02524	1.00941	0.97101	0.98015
1	1	2	1	6	22	0.94203	0.96938	0.91319	1.92509	1.75797
1	1	2	1	2	23	1.20609	0.96795	1.16744	0.41033	0.47903
1	1	2	1	3	23	0.95913	1.00896	0.96772	0.61936	0.59937
1	1	2	1	4	23	1.11219	0.91561	1.01833	3.89718	3.96863
1	1	2	1	5	23	0.90239	0.91238	0.82332	0.13761	0.11330
1	1	2	1	6	23	0.64907	0.97842	0.63507	3.21310	2.04053
1	1	2	1	2	24	0.95826	0.85582	0.82010	0.18241	0.14959
1	1	2	1	3	24	0.92792	1.06786	0.99089	35.23686	34.91594
1	1	2	1	4	24	1.61045	1.65254	2.66133	0.05564	0.14809
1	1	2	1	5	24	1.19521	0.98879	1.18181	0.81182	0.95941
1	1	2	1	6	24	0.64957	1.13350	0.73629	0.24540	0.18069
1	1	2	1	2	25	1.22715	0.97961	1.20213	0.24101	0.28973
1	1	2	1	3	25	0.82370	1.01257	0.83405	2.24767	1.87467
1	1	2	1	4	25	0.91227	1.03332	0.94266	0.33889	0.31945
1	1	2	1	5	25	1.04357	1.03567	1.08079	0.96680	1.04492
1	1	2	1	6	25	0.82244	1.13704	0.93515	2.95513	2.76348
1	1	2	1	2	26	1.17644	1.01711	1.19657	0.09502	0.11370
1	1	2	1	3	26	1.04724	0.97996	1.02625	11.36981	11.66827
1	1	2	1	4	26	1.18132	1.03002	1.21678	0.66409	0.80805
1	1	2	1	5	26	0.94237	0.99430	0.93700	0.92768	0.86924
1	1	2	1	6	26	0.77877	0.99344	0.77366	2.62965	2.03445
1	1	2	1	2	27	0.96603	1.04203	1.00664	5.31499	5.35026
1	1	2	1	3	27	0.93397	1.09121	1.01916	0.22717	0.23152
1	1	2	1	4	27	0.96900	0.99807	0.96713	0.78432	0.75854
1	1	2	1	5	27	1.04287	1.00104	1.04395	1.27158	1.32747
1	1	2	1	6	27	0.77242	1.01025	0.78033	2.40455	1.87635
1	1	2	1	2	28	20.92569	0.35472	7.42278	1.00000	7.42278
1	1	2	1	3	28	273.48646	0.14923	40.81288	1.00000	40.81288
1	1	2	1	4	28	0.63048	0.39898	0.25155	15.99381	4.02323
1	1	2	1	5	28	9.87484	0.39079	3.85896	0.06252	0.24128
1	1	2	1	6	28	1.06241	1.10572	1.17473	1.76241	2.07036

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
1	1	2	0	2	29	0.93555	0.99035	0.92653	1.04048	0.96403
1	1	2	0	3	29	0.92195	0.98848	0.91133	0.60886	0.55487
1	1	2	0	4	29	0.98401	1.02906	1.01261	1.19946	1.21458
1	1	2	0	5	29	0.74322	1.02746	0.76363	0.83371	0.63664
1	1	2	0	6	29	1.37332	1.02266	1.40444	1.74052	2.44447
1	1	2	0	2	30	0.97046	1.00213	0.97253	0.87929	0.85513
1	1	2	0	3	30	1.04387	1.01345	1.05791	1.13464	1.20034
1	1	2	0	4	30	0.97475	0.98653	0.96163	0.81248	0.78130
1	1	2	0	5	30	0.95868	0.99971	0.95841	1.06409	1.01983
1	1	2	0	6	30	1.01987	0.99676	1.01657	0.80458	0.81791
1	1	2	0	2	31	1.05406	1.09614	1.15540	1.04243	1.20443
1	1	2	0	3	31	1.09953	0.97146	1.06815	0.95929	1.02467
1	1	2	0	4	31	0.89951	0.98477	0.88580	1.00000	0.88580
1	1	2	0	5	31	1.06100	1.02754	1.09022	1.16528	1.27041
1	1	2	0	6	31	1.18346	0.98308	1.16343	0.94349	1.09769
1	1	2	0	2	32	0.84536	1.00433	0.84902	1.00000	0.84902
1	1	2	0	3	32	1.03188	1.02711	1.05985	1.00000	1.05985
1	1	2	0	4	32	0.91698	1.03001	0.94450	1.00000	0.94450
1	1	2	0	5	32	1.02573	1.06488	1.09228	1.00000	1.09228
1	1	2	0	6	32	0.77407	1.06364	0.82332	1.00000	0.82332
1	1	2	0	2	33	0.94701	0.95158	0.90116	0.94680	0.85321
1	1	2	0	3	33	0.75693	1.03052	0.78003	0.58003	0.45244
1	1	2	0	4	33	1.20113	1.07438	1.29047	1.00000	1.29047
1	1	2	0	5	33	0.68856	1.11516	0.76786	1.00000	0.76786
1	1	2	0	6	33	1.42334	1.00381	1.42877	1.71445	2.44956
1	1	2	0	2	34	0.97663	0.99983	0.97646	0.98494	0.96175
1	1	2	0	3	34	0.95698	0.99846	0.95550	0.63445	0.60622
1	1	2	0	4	34	1.01591	1.03684	1.05333	1.34328	1.41492
1	1	2	0	5	34	0.72085	1.01580	0.73224	0.74444	0.54512
1	1	2	0	6	34	1.19674	1.00176	1.19884	1.14788	1.37613
1	1	2	0	2	35	0.99100	1.03488	1.02556	0.86157	0.88359
1	1	2	0	3	35	1.05500	1.01504	1.07087	0.75419	0.80764

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
1	1	2	1	2	29	0.88505	1.08278	0.95832	4.95567	4.74912
1	1	2	1	3	29	0.90305	0.96542	0.87182	0.02436	0.02124
1	1	2	1	4	29	1.32937	0.98421	1.30838	8.65350	11.32204
1	1	2	1	5	29	0.60610	0.95573	0.57927	0.88611	0.51330
1	1	2	1	6	29	0.87624	0.99673	0.87337	2.81634	2.45970
1	1	2	1	2	30	1.06350	1.01653	1.08108	1.12347	1.21456
1	1	2	1	3	30	0.94708	1.02691	0.97257	0.17882	0.17391
1	1	2	1	4	30	1.13298	0.91275	1.03412	4.17749	4.32004
1	1	2	1	5	30	0.69911	1.04439	0.73014	2.14063	1.56296
1	1	2	1	6	30	0.72993	0.99889	0.72912	0.69805	0.50896
1	1	2	1	2	31	1.19559	1.07995	1.29118	0.11584	0.14957
1	1	2	1	3	31	0.92411	1.02609	0.94823	2.41936	2.29410
1	1	2	1	4	31	1.03305	0.96112	0.99289	8.46253	8.40235
1	1	2	1	5	31	1.09064	1.01034	1.10191	0.11738	0.12934
1	1	2	1	6	31	0.82600	0.99228	0.81962	1.96521	1.61073
1	1	2	1	2	32	0.89433	1.06451	0.95202	1.83905	1.75081
1	1	2	1	3	32	0.98953	1.00282	0.99231	0.90934	0.90235
1	1	2	1	4	32	1.21449	1.05793	1.28484	0.43785	0.56256
1	1	2	1	5	32	0.82503	1.04080	0.85869	1.98953	1.70839
1	1	2	1	6	32	0.65361	1.01026	0.66032	1.25194	0.82667
1	1	2	1	2	33	1.11582	0.99944	1.11520	5.94004	6.62431
1	1	2	1	3	33	0.68157	1.05047	0.71597	0.10910	0.07811
1	1	2	1	4	33	1.10305	1.07069	1.18103	0.62815	0.74187
1	1	2	1	5	33	0.77065	1.07901	0.83153	2.38860	1.98620
1	1	2	1	6	33	1.16549	1.04336	1.21603	3.16193	3.84499
1	1	2	1	2	34	1.28255	0.98234	1.25990	0.39396	0.49635
1	1	2	1	3	34	0.93928	0.99552	0.93508	0.99541	0.93079
1	1	2	1	4	34	1.07145	0.99031	1.06107	3.00923	3.19300
1	1	2	1	5	34	0.64673	1.02088	0.66024	0.83281	0.54985
1	1	2	1	6	34	0.82527	1.00856	0.83234	1.07962	0.89860
1	1	2	1	2	35	1.10181	1.05478	1.16217	4.80016	5.57860
1	1	2	1	3	35	1.03725	1.00001	1.03726	0.42926	0.44526

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
1	1	2	0	4	35	0.97953	0.99768	0.97725	1.06433	1.04011
1	1	2	0	5	35	0.91452	0.99504	0.90998	1.13396	1.03189
1	1	2	0	6	35	1.01992	1.00174	1.02170	1.02751	1.04981
1	1	2	0	2	36	1.05606	1.00431	1.06061	1.00000	1.06061
1	1	2	0	3	36	0.99706	1.07403	1.07086	1.00000	1.07086
1	1	2	0	4	36	0.91506	1.02479	0.93774	1.00000	0.93774
1	1	2	0	5	36	1.13316	1.03159	1.16896	1.09518	1.28022
1	1	2	0	6	36	0.76586	1.02678	0.78636	0.91309	0.71802
1	1	2	0	2	37	0.93149	0.99663	0.92835	0.97172	0.90210
1	1	2	0	3	37	1.07981	1.01195	1.09271	1.12025	1.22411
1	1	2	0	4	37	0.96964	0.99376	0.96359	0.92695	0.89320
1	1	2	0	5	37	0.90036	1.00507	0.90493	1.11439	1.00844
1	1	2	0	6	37	1.08802	1.00040	1.08845	0.89516	0.97434
1	1	2	0	2	38	0.93821	0.99231	0.93099	1.15730	1.07743
1	1	2	0	3	38	0.98586	1.00061	0.98647	0.94836	0.93553
1	1	2	0	4	38	0.94320	0.99247	0.93609	0.63415	0.59362
1	1	2	0	5	38	1.00348	1.02724	1.03081	1.17975	1.21610
1	1	2	0	6	38	0.82096	1.08954	0.89447	1.32052	1.18116
1	1	2	0	2	39	0.90601	1.00592	0.91138	0.93834	0.85518
1	1	2	0	3	39	0.79189	0.98992	0.78390	0.98928	0.77550
1	1	2	0	4	39	1.22141	1.00717	1.23016	1.26827	1.56017
1	1	2	0	5	39	0.90000	0.95152	0.85637	1.01390	0.86827
1	1	2	0	6	39	0.98012	1.02906	1.00860	1.19936	1.20968
1	1	2	0	2	40	0.96613	1.01061	0.97638	1.07269	1.04735
1	1	2	0	3	40	1.04350	1.00837	1.05223	0.75287	0.79219
1	1	2	0	4	40	0.99245	1.01149	1.00385	1.13977	1.14416
1	1	2	0	5	40	0.91947	0.97579	0.89721	1.20076	1.07733
1	1	2	0	6	40	1.10744	1.05617	1.16965	0.77726	0.90911
1	1	2	0	2	41	0.99928	0.99637	0.99565	1.17836	1.17324
1	1	2	0	3	41	0.98443	1.00908	0.99337	1.34704	1.33811
1	1	2	0	4	41	0.92524	0.99471	0.92035	0.73893	0.68007
1	1	2	0	5	41	1.07389	0.96114	1.03215	0.71711	0.74017

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
1	1	2	1	4	35	1.12475	1.00994	1.13593	0.82793	0.94047
1	1	2	1	5	35	1.00273	0.98498	0.98767	0.82120	0.81107
1	1	2	1	6	35	0.72913	1.00332	0.73155	1.84009	1.34612
1	1	2	1	2	36	1.01700	0.98810	1.00490	1.05719	1.06236
1	1	2	1	3	36	0.88005	1.15434	1.01588	1.94200	1.97284
1	1	2	1	4	36	0.84732	0.99879	0.84629	0.49155	0.41599
1	1	2	1	5	36	0.98660	1.08339	1.06887	2.40454	2.57014
1	1	2	1	6	36	0.73202	1.09822	0.80392	0.53939	0.43363
1	1	2	1	2	37	1.12709	1.00432	1.13196	0.87002	0.98483
1	1	2	1	3	37	0.95559	1.02051	0.97519	0.34418	0.33564
1	1	2	1	4	37	1.29352	0.89540	1.15822	4.34333	5.03052
1	1	2	1	5	37	0.77444	0.93557	0.72454	0.72636	0.52628
1	1	2	1	6	37	0.76843	1.00201	0.76997	1.56331	1.20371
1	1	2	1	2	38	1.28646	1.00997	1.29928	0.62780	0.81569
1	1	2	1	3	38	0.85180	1.00124	0.85286	1.09847	0.93683
1	1	2	1	4	38	0.95565	0.99971	0.95537	0.77442	0.73986
1	1	2	1	5	38	1.02432	1.00494	1.02938	1.86605	1.92088
1	1	2	1	6	38	0.68029	1.03369	0.70321	0.71194	0.50065
1	1	2	1	2	39	1.13352	0.99814	1.13142	0.68562	0.77572
1	1	2	1	3	39	0.72378	1.04319	0.75503	1.95250	1.47421
1	1	2	1	4	39	1.29861	1.01394	1.31671	1.42594	1.87755
1	1	2	1	5	39	0.82753	0.98582	0.81580	0.60098	0.49028
1	1	2	1	6	39	1.10073	1.01979	1.12251	0.91129	1.02294
1	1	2	1	2	40	1.20627	0.98328	1.18610	0.22424	0.26597
1	1	2	1	3	40	0.94402	0.99622	0.94045	1.21809	1.14555
1	1	2	1	4	40	1.01987	0.97951	0.99898	2.04618	2.04409
1	1	2	1	5	40	0.88266	1.00195	0.88439	2.29969	2.03382
1	1	2	1	6	40	0.84185	1.01385	0.85350	0.27664	0.23611
1	1	2	1	2	41	1.21257	1.00494	1.21856	0.78697	0.95897
1	1	2	1	3	41	0.98544	1.00680	0.99214	0.75906	0.75309
1	1	2	1	4	41	1.14475	0.93357	1.06870	6.02861	6.44279
1	1	2	1	5	41	1.07720	0.90848	0.97862	0.23238	0.22741

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
1	1	2	0	6	41	1.00525	0.94865	0.95363	1.09972	1.04872
1	1	2	0	2	42	0.96934	0.99336	0.96291	0.42933	0.41340
1	1	2	0	3	42	0.77157	1.00000	0.77157	0.82778	0.63869
1	1	2	0	4	42	1.42195	1.10712	1.57427	1.71718	2.70330
1	1	2	0	5	42	0.96664	0.94957	0.91789	0.91654	0.84128
1	1	2	0	6	42	0.92756	1.00000	0.92756	1.09377	1.01454
1	1	2	0	2	43	1.07945	1.00785	1.08793	1.17561	1.27898
1	1	2	0	3	43	1.05324	1.00000	1.05324	1.15544	1.21695
1	1	2	0	4	43	1.05664	1.02755	1.08575	1.44825	1.57244
1	1	2	0	5	43	1.01589	0.96860	0.98400	0.67026	0.65954
1	1	2	0	6	43	1.26533	1.00000	1.26533	1.28942	1.63154
1	1	2	0	2	44	0.82492	1.04213	0.85968	0.74991	0.64468
1	1	2	0	3	44	1.24346	1.01362	1.26040	1.45465	1.83344
1	1	2	0	4	44	1.01740	1.00007	1.01747	0.89802	0.91370
1	1	2	0	5	44	0.74350	1.00110	0.74433	1.48604	1.10610
1	1	2	0	6	44	1.10490	1.01575	1.12230	0.57387	0.64405
1	1	2	0	2	45	0.97216	1.00029	0.97245	1.08732	1.05736
1	1	2	0	3	45	0.64550	1.00519	0.64885	1.41673	0.91925
1	1	2	0	4	45	1.38995	1.01218	1.40688	0.85524	1.20322
1	1	2	0	5	45	0.76038	1.01904	0.77486	1.12680	0.87311
1	1	2	0	6	45	1.23358	1.00714	1.24239	0.89266	1.10903
1	1	2	0	2	46	0.98290	1.00662	0.98941	0.86983	0.86061
1	1	2	0	3	46	1.18218	1.02684	1.21391	1.08946	1.32251
1	1	2	0	4	46	0.94219	1.00697	0.94876	0.94820	0.89961
1	1	2	0	5	46	0.80564	1.00328	0.80828	1.22207	0.98778
1	1	2	0	6	46	1.17137	1.00296	1.17484	0.79212	0.93061
1	1	2	0	2	47	0.89581	1.03399	0.92625	0.76866	0.71197
1	1	2	0	3	47	1.18984	1.05709	1.25777	1.00000	1.25777
1	1	2	0	4	47	0.94865	1.00643	0.95475	1.00000	0.95475
1	1	2	0	5	47	0.95780	1.00000	0.95780	1.00000	0.95780
1	1	2	0	6	47	0.95855	1.00000	0.95855	1.00000	0.95855
1	1	2	0	2	48	0.95350	1.02459	0.97695	1.00000	0.97695

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
1	1	2	1	6	41	1.28477	0.77017	0.98949	0.30930	0.30605
1	1	2	1	2	42	1.02225	0.92608	0.94668	0.40382	0.38229
1	1	2	1	3	42	0.74995	0.96674	0.72500	2.50603	1.81688
1	1	2	1	4	42	1.38539	1.14005	1.57942	0.97507	1.54004
1	1	2	1	5	42	0.92492	0.97299	0.89994	0.51914	0.46719
1	1	2	1	6	42	0.85496	1.03966	0.88887	1.11000	0.98664
1	1	2	1	2	43	0.77105	1.01317	0.78120	1.27773	0.99817
1	1	2	1	3	43	1.06008	1.00036	1.06046	1.23005	1.30442
1	1	2	1	4	43	1.14621	1.08122	1.23931	1.68409	2.08711
1	1	2	1	5	43	0.90770	0.96949	0.88000	0.42736	0.37608
1	1	2	1	6	43	1.03380	1.17181	1.21141	1.62212	1.96506
1	1	2	1	2	44	1.07845	1.02259	1.10282	1.44285	1.59121
1	1	2	1	3	44	1.15663	1.01244	1.17102	1.17533	1.37634
1	1	2	1	4	44	0.97782	1.00564	0.98334	0.84673	0.83262
1	1	2	1	5	44	0.86747	1.00248	0.86962	1.91492	1.66526
1	1	2	1	6	44	0.80752	1.00278	0.80977	0.53040	0.42950
1	1	2	1	2	45	1.13428	0.99973	1.13398	0.88119	0.99925
1	1	2	1	3	45	0.53877	1.00832	0.54326	1.77588	0.96476
1	1	2	1	4	45	1.40037	1.00636	1.40927	0.80410	1.13320
1	1	2	1	5	45	0.80156	1.01354	0.81241	1.50166	1.21996
1	1	2	1	6	45	1.00899	0.99845	1.00743	0.74757	0.75312
1	1	2	1	2	46	1.11994	1.03209	1.15588	1.41793	1.63895
1	1	2	1	3	46	1.20682	1.00728	1.21560	0.75482	0.91757
1	1	2	1	4	46	1.04495	1.00415	1.04929	0.85962	0.90199
1	1	2	1	5	46	0.70583	1.03664	0.73169	1.71733	1.25655
1	1	2	1	6	46	0.85227	0.99572	0.84863	2.50922	2.12939
1	1	2	1	2	47	0.90207	1.07276	0.96770	6.08599	5.88943
1	1	2	1	3	47	1.19728	1.04056	1.24583	0.33806	0.42116
1	1	2	1	4	47	1.01849	1.00022	1.01871	0.98756	1.00604
1	1	2	1	5	47	0.83896	1.05514	0.88522	1.79501	1.58897
1	1	2	1	6	47	0.68872	1.00485	0.69206	1.13109	0.78279
1	1	2	1	2	48	1.19037	1.04564	1.24470	1.43332	1.78405

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
1	1	2	0	3	48	1.04207	1.02908	1.07237	1.00000	1.07237
1	1	2	0	4	48	0.93066	0.98357	0.91537	1.07391	0.98303
1	1	2	0	5	48	0.94049	0.99143	0.93243	0.93118	0.86826
1	1	2	0	6	48	1.11715	1.01543	1.13439	1.00000	1.13439
1	1	2	0	2	49	0.98557	0.98747	0.97322	1.08082	1.05187
1	1	2	0	3	49	1.02186	1.00648	1.02848	0.94800	0.97500
1	1	2	0	4	49	0.95428	1.00142	0.95563	0.85885	0.82074
1	1	2	0	5	49	0.81534	0.99625	0.81228	0.96662	0.78517
1	1	2	0	6	49	0.98514	1.05961	1.04386	1.26064	1.31593
1	1	2	0	2	50	1.04151	0.99805	1.03948	1.04841	1.08980
1	1	2	0	3	50	1.09268	0.99875	1.09131	0.83148	0.90740
1	1	2	0	4	50	0.85819	1.00452	0.86208	0.90084	0.77659
1	1	2	0	5	50	1.07750	0.99480	1.07190	1.01771	1.09088
1	1	2	0	6	50	0.67488	1.00000	0.67488	1.58303	1.06835
1	2	2	0	2	1	1.03380	0.99469	1.02831	0.95086	0.97778
1	2	2	0	3	1	1.01339	1.00183	1.01524	1.41139	1.43289
1	2	2	0	4	1	0.99303	0.98542	0.97855	0.77534	0.75871
1	2	2	0	5	1	1.00107	0.99548	0.99655	0.89759	0.89450
1	2	2	0	6	1	1.15795	0.98137	1.13639	1.19553	1.35858
1	2	2	0	2	2	1.00131	0.97886	0.98015	1.07056	1.04930
1	2	2	0	3	2	0.95476	0.96279	0.91923	1.61188	1.48169
1	2	2	0	4	2	0.94253	1.00972	0.95169	0.57122	0.54363
1	2	2	0	5	2	0.98452	1.01411	0.99841	1.23955	1.23758
1	2	2	0	6	2	0.98161	0.99260	0.97435	1.03912	1.01247
1	2	2	0	2	3	0.92369	1.03841	0.95917	1.00000	0.95917
1	2	2	0	3	3	1.04041	1.00149	1.04196	1.00000	1.04196
1	2	2	0	4	3	1.03149	0.96947	1.00000	1.00000	1.00000
1	2	2	0	5	3	0.83590	1.13742	0.95077	1.00000	0.95077
1	2	2	0	6	3	0.94406	1.00211	0.94605	1.00000	0.94605
1	2	2	0	2	4	1.00858	0.95023	0.95838	1.41727	1.35829
1	2	2	0	3	4	1.07423	1.00000	1.07423	0.97835	1.05097
1	2	2	0	4	4	0.91690	0.95355	0.87431	0.92680	0.81032

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
1	1	2	1	3	48	1.01025	1.00386	1.01415	3.00319	3.04568
1	1	2	1	4	48	0.97546	1.01914	0.99414	0.22188	0.22058
1	1	2	1	5	48	0.74079	1.11652	0.82710	8.64713	7.15208
1	1	2	1	6	48	0.85086	1.00579	0.85578	0.30279	0.25912
1	1	2	1	2	49	1.08367	0.97385	1.05533	0.51005	0.53827
1	1	2	1	3	49	0.99529	0.99895	0.99425	2.96286	2.94581
1	1	2	1	4	49	1.28999	1.00867	1.30117	0.50114	0.65208
1	1	2	1	5	49	0.65342	0.97564	0.63750	1.26646	0.80737
1	1	2	1	6	49	0.74170	1.01868	0.75556	0.84685	0.63985
1	1	2	1	2	50	1.35538	0.93653	1.26936	0.31526	0.40018
1	1	2	1	3	50	1.04447	1.02234	1.06781	2.12571	2.26986
1	1	2	1	4	50	0.88953	1.00012	0.88963	0.80796	0.71878
1	1	2	1	5	50	1.02157	1.01131	1.03312	0.79502	0.82134
1	1	2	1	6	50	0.65767	0.91039	0.59874	0.79403	0.47541
1	2	2	1	2	1	1.20327	1.00274	1.20656	0.60422	0.72903
1	2	2	1	3	1	0.98928	1.00411	0.99334	2.03264	2.01910
1	2	2	1	4	1	1.00248	0.99785	1.00033	0.81653	0.81680
1	2	2	1	5	1	1.06613	0.99571	1.06156	0.81695	0.86725
1	2	2	1	6	1	0.78940	0.99585	0.78612	2.22679	1.75053
1	2	2	1	2	2	1.15377	0.98435	1.13572	0.15099	0.17148
1	2	2	1	3	2	0.95468	0.98319	0.93863	1.96398	1.84345
1	2	2	1	4	2	1.04990	0.97111	1.01957	1.91120	1.94859
1	2	2	1	5	2	0.97214	0.98624	0.95876	1.49697	1.43524
1	2	2	1	6	2	0.74717	1.00436	0.75043	0.53993	0.40517
1	2	2	1	2	3	3.93864	0.81616	3.21456	2.84043	9.13073
1	2	2	1	3	3	0.31889	1.01614	0.32404	0.29554	0.09577
1	2	2	1	4	3	1.23181	1.22518	1.50918	0.43905	0.66261
1	2	2	1	5	3	2.33973	0.70771	1.65585	9.87062	16.34425
1	2	2	1	6	3	0.70203	1.00201	0.70344	1.45287	1.02200
1	2	2	1	2	4	1.13623	0.97379	1.10645	0.21384	0.23660
1	2	2	1	3	4	1.06691	0.99535	1.06195	0.87935	0.93382
1	2	2	1	4	4	0.94461	0.94153	0.88938	2.82865	2.51575

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
1	2	2	0	5	4	1.12828	0.94517	1.06641	0.97701	1.04189
1	2	2	0	6	4	0.88621	0.99863	0.88499	0.83248	0.73674
1	2	2	0	2	5	1.07770	1.03589	1.11638	1.04619	1.16794
1	2	2	0	3	5	0.97477	1.00164	0.97637	1.10352	1.07744
1	2	2	0	4	5	0.92959	1.01715	0.94554	0.86618	0.81901
1	2	2	0	5	5	0.94865	1.08531	1.02958	1.09049	1.12275
1	2	2	0	6	5	1.03373	1.00640	1.04035	1.04396	1.08608
1	2	2	0	2	6	1.00968	0.99999	1.00967	1.00623	1.01596
1	2	2	0	3	6	1.03814	1.00001	1.03815	0.99887	1.03698
1	2	2	0	4	6	0.95803	1.00106	0.95904	1.13345	1.08703
1	2	2	0	5	6	0.98121	1.00221	0.98338	0.98791	0.97149
1	2	2	0	6	6	1.03002	0.99597	1.02587	0.93553	0.95973
1	2	2	0	2	7	0.92222	1.08434	1.00000	1.00000	1.00000
1	2	2	0	3	7	0.92068	0.95103	0.87560	1.30433	1.14207
1	2	2	0	4	7	1.03054	1.01112	1.04200	0.76668	0.79888
1	2	2	0	5	7	0.85756	1.09891	0.94238	1.00000	0.94238
1	2	2	0	6	7	0.96102	1.04056	1.00000	1.00000	1.00000
1	2	2	0	2	8	0.97873	0.95814	0.93776	0.57010	0.53462
1	2	2	0	3	8	0.98761	1.00432	0.99188	2.01013	1.99382
1	2	2	0	4	8	0.99409	1.01170	1.00572	0.49361	0.49643
1	2	2	0	5	8	1.00053	0.99947	1.00000	1.00000	1.00000
1	2	2	0	6	8	1.16063	1.00000	1.16063	1.02440	1.18895
1	2	2	0	2	9	0.98874	0.97684	0.96585	1.22784	1.18590
1	2	2	0	3	9	1.03278	1.03166	1.06549	0.72802	0.77570
1	2	2	0	4	9	1.04245	1.02509	1.06860	1.00000	1.06860
1	2	2	0	5	9	0.97943	1.03309	1.01184	1.41574	1.43251
1	2	2	0	6	9	0.98993	1.00710	0.99695	0.70635	0.70419
1	2	2	0	2	10	1.02616	1.01327	1.03978	1.06374	1.10605
1	2	2	0	3	10	1.00389	1.01231	1.01626	0.94008	0.95536
1	2	2	0	4	10	1.08365	0.88219	0.95598	3.02599	2.89280
1	2	2	0	5	10	1.23372	1.00480	1.23964	0.36411	0.45137
1	2	2	0	6	10	0.82892	0.99819	0.82742	1.10371	0.91323

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
1	2	2	1	5	4	1.18053	0.97024	1.14539	0.38753	0.44388
1	2	2	1	6	4	0.75489	1.01759	0.76817	1.33453	1.02514
1	2	2	1	2	5	1.07092	1.10394	1.18224	6.90989	8.16911
1	2	2	1	3	5	0.98650	1.00086	0.98735	0.17412	0.17192
1	2	2	1	4	5	0.91327	1.01873	0.93038	0.65627	0.61058
1	2	2	1	5	5	1.03827	1.06954	1.11047	2.49955	2.77568
1	2	2	1	6	5	0.73419	0.99957	0.73387	1.20098	0.88136
1	2	2	1	2	6	1.06259	0.99782	1.06027	0.90645	0.96108
1	2	2	1	3	6	1.00952	0.99850	1.00800	1.07280	1.08138
1	2	2	1	4	6	1.12264	1.02716	1.15313	0.77755	0.89661
1	2	2	1	5	6	0.94071	0.99672	0.93763	0.75713	0.70990
1	2	2	1	6	6	0.73284	1.00187	0.73421	1.16979	0.85888
1	2	2	1	2	7	0.91962	0.99124	0.91156	1.20344	1.09702
1	2	2	1	3	7	1.05284	1.07111	1.12771	0.78633	0.88675
1	2	2	1	4	7	0.98022	1.00700	0.98708	0.62456	0.61649
1	2	2	1	5	7	0.56762	1.09243	0.62009	1.45916	0.90481
1	2	2	1	6	7	0.95930	1.11001	1.06483	0.88193	0.93911
1	2	2	1	2	8	1.10433	0.97206	1.07347	2.65585	2.85099
1	2	2	1	3	8	1.01343	0.99991	1.01335	0.42972	0.43545
1	2	2	1	4	8	0.52750	0.98993	0.52218	1.22313	0.63870
1	2	2	1	5	8	1.03830	1.01046	1.04916	0.90848	0.95314
1	2	2	1	6	8	0.81018	1.00663	0.81555	3.33837	2.72261
1	2	2	1	2	9	1.16190	1.00432	1.16691	2.06492	2.40958
1	2	2	1	3	9	0.71410	1.00378	0.71680	0.23632	0.16939
1	2	2	1	4	9	0.94504	1.04362	0.98627	1.22211	1.20532
1	2	2	1	5	9	1.07162	1.00643	1.07851	1.49841	1.61605
1	2	2	1	6	9	0.75314	1.00096	0.75386	3.58233	2.70059
1	2	2	1	2	10	1.17983	1.00220	1.18242	4.73892	5.60338
1	2	2	1	3	10	0.96735	1.00064	0.96797	0.13964	0.13516
1	2	2	1	4	10	1.10280	0.88201	0.97268	2.86634	2.78802
1	2	2	1	5	10	1.23057	1.00806	1.24049	0.45016	0.55842
1	2	2	1	6	10	0.71834	1.00385	0.72111	1.80776	1.30359

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
1	2	2	0	2	11	1.02604	0.94366	0.96823	1.96714	1.90465
1	2	2	0	3	11	0.88655	0.99956	0.88616	0.50835	0.45048
1	2	2	0	4	11	0.94657	1.04095	0.98534	1.27596	1.25725
1	2	2	0	5	11	0.97742	1.03612	1.01272	1.50484	1.52399
1	2	2	0	6	11	1.28893	1.00719	1.29820	0.62786	0.81508
1	2	2	0	2	12	0.98715	1.01903	1.00594	1.00000	1.00594
1	2	2	0	3	12	1.32175	1.04585	1.38235	1.00000	1.38235
1	2	2	0	4	12	0.71212	1.05109	0.74850	1.00000	0.74850
1	2	2	0	5	12	1.34587	1.02751	1.38289	1.00000	1.38289
1	2	2	0	6	12	0.63546	1.07796	0.68500	1.00000	0.68500
1	2	2	0	2	13	0.93514	1.10462	1.03297	1.17455	1.21328
1	2	2	0	3	13	1.01282	1.01072	1.02367	1.09477	1.12068
1	2	2	0	4	13	0.90681	1.00989	0.91578	0.77769	0.71219
1	2	2	0	5	13	0.89290	1.03980	0.92844	1.19722	1.11154
1	2	2	0	6	13	0.90878	1.00009	0.90886	0.83527	0.75914
1	2	2	0	2	14	1.01365	0.99685	1.01046	0.87062	0.87973
1	2	2	0	3	14	0.95018	0.99464	0.94508	1.00000	0.94508
1	2	2	0	4	14	1.07934	1.00837	1.08838	1.16668	1.26980
1	2	2	0	5	14	0.95294	0.99976	0.95271	1.27806	1.21763
1	2	2	0	6	14	1.05034	1.01687	1.06807	0.67065	0.71630
1	2	2	0	2	15	0.98329	0.97717	0.96084	0.75973	0.72998
1	2	2	0	3	15	1.04226	1.00038	1.04266	1.00000	1.04266
1	2	2	0	4	15	0.82225	1.20567	0.99137	1.13831	1.12848
1	2	2	0	5	15	0.90095	1.03657	0.93390	1.20540	1.12572
1	2	2	0	6	15	1.00942	1.10280	1.11318	1.03470	1.15181
1	2	2	0	2	16	1.01595	1.00136	1.01733	0.98572	1.00281
1	2	2	0	3	16	0.96883	1.00000	0.96883	1.13182	1.09654
1	2	2	0	4	16	0.96127	1.00945	0.97036	0.82841	0.80386
1	2	2	0	5	16	0.99749	1.00916	1.00663	1.11354	1.12092
1	2	2	0	6	16	0.97663	0.99081	0.96766	1.30773	1.26544
1	2	2	0	2	17	0.97564	0.99247	0.96829	1.06456	1.03081
1	2	2	0	3	17	1.13480	0.99972	1.13449	1.05592	1.19793

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
1	2	2	1	2	11	1.35091	0.91437	1.23523	1.62275	2.00447
1	2	2	1	3	11	0.90712	1.01982	0.92510	2.44668	2.26343
1	2	2	1	4	11	0.97220	1.03003	1.00140	0.38366	0.38420
1	2	2	1	5	11	1.09563	1.00361	1.09959	1.39915	1.53849
1	2	2	1	6	11	0.84591	1.01095	0.85517	1.09253	0.93431
1	2	2	1	2	12	1.75720	0.85634	1.50476	1.00000	1.50476
1	2	2	1	3	12	0.32276	0.37104	0.11976	1.00000	0.11976
1	2	2	1	4	12	0.92605	0.80017	0.74100	1.00000	0.74100
1	2	2	1	5	12	2.27955	0.76678	1.74792	1.00000	1.74792
1	2	2	1	6	12	1.04901	0.84922	0.89083	1.00000	0.89083
1	2	2	1	2	13	1.25553	1.08665	1.36433	0.86016	1.17354
1	2	2	1	3	13	1.02018	1.01658	1.03710	1.89341	1.96365
1	2	2	1	4	13	0.91814	0.99001	0.90897	1.73317	1.57540
1	2	2	1	5	13	1.03791	1.00776	1.04596	0.49052	0.51307
1	2	2	1	6	13	0.69880	1.01746	0.71100	2.50308	1.77968
1	2	2	1	2	14	1.13446	1.01193	1.14800	1.20255	1.38053
1	2	2	1	3	14	0.98785	0.99979	0.98764	1.22527	1.21013
1	2	2	1	4	14	1.07153	1.04930	1.12436	0.47170	0.53036
1	2	2	1	5	14	1.05570	0.99231	1.04757	0.90069	0.94354
1	2	2	1	6	14	0.75416	1.00490	0.75786	3.25755	2.46875
1	2	2	1	2	15	1.18792	0.99160	1.17794	0.59285	0.69834
1	2	2	1	3	15	0.32627	0.99874	0.32586	6.13712	1.99982
1	2	2	1	4	15	2.19681	1.41200	3.10190	0.30238	0.93795
1	2	2	1	5	15	1.02724	1.00835	1.03581	1.83385	1.89952
1	2	2	1	6	15	0.75481	1.04600	0.78953	0.52804	0.41690
1	2	2	1	2	16	1.07406	1.01210	1.08706	1.24519	1.35360
1	2	2	1	3	16	0.99175	0.99929	0.99105	0.56449	0.55943
1	2	2	1	4	16	1.28170	0.94419	1.21016	0.15036	0.18196
1	2	2	1	5	16	0.88048	0.95778	0.84330	7.19603	6.06844
1	2	2	1	6	16	0.80552	0.95679	0.77072	0.26635	0.20528
1	2	2	1	2	17	1.13090	1.00046	1.13142	0.98349	1.11274
1	2	2	1	3	17	1.00641	1.00374	1.01018	0.65412	0.66078

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
1	2	2	0	4	17	0.89816	0.99889	0.89716	0.81987	0.73556
1	2	2	0	5	17	0.98703	1.01238	0.99925	1.30765	1.30668
1	2	2	0	6	17	1.09553	0.99589	1.09102	0.83341	0.90927
1	2	2	0	2	18	0.82644	1.13643	0.93919	1.00000	0.93919
1	2	2	0	3	18	1.00316	1.00455	1.00772	1.00000	1.00772
1	2	2	0	4	18	0.83889	1.15310	0.96733	1.00000	0.96733
1	2	2	0	5	18	1.03645	1.00913	1.04591	1.00000	1.04591
1	2	2	0	6	18	0.91232	1.09610	1.00000	1.00000	1.00000
1	2	2	0	2	19	0.98683	1.00541	0.99217	1.04870	1.04048
1	2	2	0	3	19	1.05535	0.98725	1.04190	0.92533	0.96409
1	2	2	0	4	19	0.93907	1.00656	0.94522	0.95847	0.90597
1	2	2	0	5	19	0.91669	1.03578	0.94948	0.80190	0.76139
1	2	2	0	6	19	0.97938	1.05251	1.03080	1.00000	1.03080
1	2	2	0	2	20	0.85974	0.99934	0.85918	0.67912	0.58348
1	2	2	0	3	20	1.14637	1.00686	1.15423	1.10977	1.28093
1	2	2	0	4	20	1.03168	0.98892	1.02025	1.46437	1.49402
1	2	2	0	5	20	0.85720	1.04421	0.89510	1.35818	1.21571
1	2	2	0	6	20	0.99738	1.04901	1.04626	0.64469	0.67451
1	2	2	0	2	21	1.00474	0.99767	1.00240	1.07531	1.07789
1	2	2	0	3	21	0.99213	0.99902	0.99115	1.03690	1.02772
1	2	2	0	4	21	0.95411	1.00754	0.96131	0.90974	0.87454
1	2	2	0	5	21	0.99540	0.98045	0.97594	0.96994	0.94660
1	2	2	0	6	21	0.98060	0.99501	0.97571	1.18712	1.15828
1	2	2	0	2	22	0.99407	1.00596	1.00000	1.00000	1.00000
1	2	2	0	3	22	0.89646	1.11550	1.00000	1.00000	1.00000
1	2	2	0	4	22	1.08114	0.92495	1.00000	1.00000	1.00000
1	2	2	0	5	22	0.96440	1.01982	0.98352	1.75252	1.72363
1	2	2	0	6	22	1.15486	0.93064	1.07476	0.74046	0.79581
1	2	2	0	2	23	1.00617	1.00258	1.00877	1.19371	1.20418
1	2	2	0	3	23	1.05045	1.00000	1.05045	0.99537	1.04559
1	2	2	0	4	23	0.83407	1.00262	0.83626	0.84162	0.70381
1	2	2	0	5	23	0.82880	1.05091	0.87100	1.00000	0.87100

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
1	2	2	1	4	17	0.94943	0.99272	0.94252	1.03690	0.97729
1	2	2	1	5	17	1.04601	0.99025	1.03581	0.60611	0.62781
1	2	2	1	6	17	0.74568	1.01112	0.75397	2.18513	1.64752
1	2	2	1	2	18	1.72316	0.97481	1.67976	1.55578	2.61334
1	2	2	1	3	18	0.49309	1.01449	0.50024	0.95660	0.47853
1	2	2	1	4	18	1.78026	1.10160	1.96114	0.87418	1.71440
1	2	2	1	5	18	0.78407	0.99739	0.78202	0.49589	0.38780
1	2	2	1	6	18	0.73940	1.00715	0.74469	1.80322	1.34284
1	2	2	1	2	19	1.17253	0.99969	1.17216	2.01552	2.36251
1	2	2	1	3	19	0.99083	0.99996	0.99080	1.15822	1.14756
1	2	2	1	4	19	1.01492	0.99190	1.00670	1.60201	1.61275
1	2	2	1	5	19	0.59923	0.99328	0.59520	0.42477	0.25282
1	2	2	1	6	19	0.57816	1.02110	0.59036	0.85655	0.50568
1	2	2	1	2	20	1.06049	0.98888	1.04870	0.64132	0.67255
1	2	2	1	3	20	1.13523	1.00103	1.13639	0.97543	1.10847
1	2	2	1	4	20	0.98367	0.99416	0.97793	1.90619	1.86411
1	2	2	1	5	20	1.06591	1.00795	1.07438	1.49107	1.60198
1	2	2	1	6	20	0.80573	1.00901	0.81300	0.57601	0.46829
1	2	2	1	2	21	1.16574	1.01042	1.17788	2.62177	3.08814
1	2	2	1	3	21	0.99586	0.99764	0.99351	0.29888	0.29695
1	2	2	1	4	21	0.97262	0.99485	0.96761	1.63536	1.58239
1	2	2	1	5	21	1.05725	0.99273	1.04956	0.71922	0.75487
1	2	2	1	6	21	0.75110	0.99330	0.74607	1.36096	1.01536
1	2	2	1	2	22	1.11328	1.02369	1.13964	0.76995	0.87747
1	2	2	1	3	22	0.76937	0.95962	0.73830	1.83457	1.35446
1	2	2	1	4	22	1.10980	1.07044	1.18797	0.70858	0.84177
1	2	2	1	5	22	1.70720	1.15040	1.96396	0.70244	1.37957
1	2	2	1	6	22	0.78180	0.95195	0.74423	2.33935	1.74102
1	2	2	1	2	23	4.17725	1.33289	5.56783	0.29203	1.62596
1	2	2	1	3	23	0.99601	0.99735	0.99338	0.73013	0.72530
1	2	2	1	4	23	1.12467	0.94436	1.06209	4.64513	4.93353
1	2	2	1	5	23	0.78912	0.92102	0.72680	0.13761	0.10001

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
1	2	2	0	6	23	0.91788	1.02020	0.93642	1.00000	0.93642
1	2	2	0	2	24	1.06077	1.03804	1.10112	1.00000	1.10112
1	2	2	0	3	24	0.86275	1.05354	0.90895	1.00000	0.90895
1	2	2	0	4	24	1.10094	1.03774	1.14249	1.00000	1.14249
1	2	2	0	5	24	0.99239	1.01780	1.01006	1.00000	1.01006
1	2	2	0	6	24	1.05084	1.10015	1.15608	1.00000	1.15608
1	2	2	0	2	25	0.97753	1.00169	0.97919	0.78945	0.77302
1	2	2	0	3	25	0.87203	1.06790	0.93124	1.08871	1.01386
1	2	2	0	4	25	0.92384	1.01774	0.94023	0.91852	0.86362
1	2	2	0	5	25	0.93118	1.04200	0.97028	1.00000	0.97028
1	2	2	0	6	25	0.93134	1.01159	0.94213	1.51358	1.42599
1	2	2	0	2	26	1.06457	0.99171	1.05574	0.88738	0.93685
1	2	2	0	3	26	0.97259	0.98004	0.95317	1.09296	1.04178
1	2	2	0	4	26	1.00462	0.99644	1.00104	1.13000	1.13118
1	2	2	0	5	26	1.00347	0.99741	1.00087	0.92872	0.92953
1	2	2	0	6	26	1.05434	1.00816	1.06295	0.88355	0.93917
1	2	2	0	2	27	0.90063	1.00979	0.90944	0.67401	0.61297
1	2	2	0	3	27	1.08392	1.06733	1.15689	1.23518	1.42897
1	2	2	0	4	27	0.94840	1.00354	0.95176	0.80960	0.77054
1	2	2	0	5	27	0.94960	1.00000	0.94960	1.26889	1.20494
1	2	2	0	6	27	1.04583	0.98761	1.03287	0.87485	0.90361
1	2	2	0	2	28	1.01574	1.00187	1.01764	1.00000	1.01764
1	2	2	0	3	28	0.95866	1.00145	0.96004	1.00000	0.96004
1	2	2	0	4	28	1.03868	1.00834	1.04735	1.03648	1.08556
1	2	2	0	5	28	0.96788	0.99968	0.96756	0.96480	0.93351
1	2	2	0	6	28	0.88932	1.07363	0.95480	1.22281	1.16754
1	2	2	0	2	29	1.01182	0.99512	1.00689	0.84813	0.85397
1	2	2	0	3	29	1.01891	0.96534	0.98359	0.99726	0.98089
1	2	2	0	4	29	0.89224	1.20048	1.07112	1.00000	1.07112
1	2	2	0	5	29	1.04831	1.03281	1.08270	1.00000	1.08270
1	2	2	0	6	29	1.32969	1.00560	1.33715	1.10654	1.47961
1	2	2	0	2	30	0.96818	1.00217	0.97028	0.93111	0.90344

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
1	2	2	1	6	23	0.68155	1.02768	0.70042	3.01038	2.10853
1	2	2	1	2	24	0.43110	0.85511	0.36864	0.18241	0.06724
1	2	2	1	3	24	4.16166	0.44443	1.84956	35.23686	65.17271
1	2	2	1	4	24	0.61312	1.65064	1.01205	0.05564	0.05631
1	2	2	1	5	24	2.63095	1.08415	2.85234	0.81182	2.31558
1	2	2	1	6	24	0.73323	1.07100	0.78528	0.21157	0.16614
1	2	2	1	2	25	1.16145	1.00705	1.16963	0.35749	0.41813
1	2	2	1	3	25	0.88900	1.08544	0.96496	1.92021	1.85293
1	2	2	1	4	25	0.93564	1.03251	0.96606	0.39668	0.38321
1	2	2	1	5	25	1.08462	1.07391	1.16479	0.96680	1.12612
1	2	2	1	6	25	0.83341	1.12033	0.93370	2.24817	2.09911
1	2	2	1	2	26	1.19094	0.97755	1.16420	0.12812	0.14915
1	2	2	1	3	26	0.98350	0.99060	0.97425	9.42095	9.17838
1	2	2	1	4	26	1.11466	1.03059	1.14877	0.54832	0.62989
1	2	2	1	5	26	0.96127	0.99462	0.95609	1.02851	0.98335
1	2	2	1	6	26	0.73784	1.00549	0.74188	2.65384	1.96884
1	2	2	1	2	27	0.91281	1.06199	0.96940	7.50908	7.27930
1	2	2	1	3	27	1.05879	1.07052	1.13345	0.17578	0.19924
1	2	2	1	4	27	0.98684	0.99835	0.98520	1.01358	0.99859
1	2	2	1	5	27	1.04291	0.99864	1.04149	0.93735	0.97624
1	2	2	1	6	27	0.74448	1.00210	0.74604	2.54054	1.89536
1	2	2	1	2	28	11.07154	0.43603	4.82753	1.00000	4.82753
1	2	2	1	3	28	155.59589	0.18499	28.78439	1.00000	28.78439
1	2	2	1	4	28	0.71241	0.47010	0.33491	8.38626	2.80861
1	2	2	1	5	28	6.57501	0.46070	3.02911	0.11924	0.36120
1	2	2	1	6	28	1.13166	1.06802	1.20863	1.22652	1.48241
1	2	2	1	2	29	0.91389	1.09255	0.99847	6.11328	6.10393
1	2	2	1	3	29	0.98049	0.97004	0.95111	0.03990	0.03795
1	2	2	1	4	29	1.12617	1.20554	1.35764	5.59012	7.58938
1	2	2	1	5	29	0.30577	0.95407	0.29172	1.37170	0.40016
1	2	2	1	6	29	0.94223	0.99755	0.93992	1.53589	1.44362
1	2	2	1	2	30	1.06743	1.01737	1.08597	1.26721	1.37616

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
1	2	2	0	3	30	1.00879	1.00715	1.01601	1.31820	1.33930
1	2	2	0	4	30	0.97100	1.00407	0.97495	0.75921	0.74019
1	2	2	0	5	30	1.01940	0.99934	1.01872	0.95419	0.97206
1	2	2	0	6	30	0.98083	1.00051	0.98133	0.99133	0.97282
1	2	2	0	2	31	1.04659	1.03986	1.08831	1.00000	1.08831
1	2	2	0	3	31	1.03435	0.97070	1.00405	1.00000	1.00405
1	2	2	0	4	31	0.90010	1.06025	0.95432	1.00000	0.95432
1	2	2	0	5	31	1.07598	1.05190	1.13183	1.16479	1.31834
1	2	2	0	6	31	1.14149	0.98843	1.12828	0.85853	0.96866
1	2	2	0	2	32	0.73845	1.00126	0.73938	1.00000	0.73938
1	2	2	0	3	32	1.05713	1.01472	1.07269	1.00000	1.07269
1	2	2	0	4	32	0.91436	1.03671	0.94792	1.00000	0.94792
1	2	2	0	5	32	0.95253	1.01116	0.96316	1.00000	0.96316
1	2	2	0	6	32	0.94365	1.06183	1.00200	1.00000	1.00200
1	2	2	0	2	33	1.00859	0.98443	0.99288	0.64293	0.63835
1	2	2	0	3	33	1.01292	0.99700	1.00988	0.87321	0.88184
1	2	2	0	4	33	1.00608	0.99396	1.00000	1.00000	1.00000
1	2	2	0	5	33	0.84423	1.18451	1.00000	1.00000	1.00000
1	2	2	0	6	33	0.96903	1.08333	1.04978	1.33567	1.40216
1	2	2	0	2	34	0.96598	1.00665	0.97241	1.15250	1.12070
1	2	2	0	3	34	0.92918	0.99759	0.92693	0.70519	0.65366
1	2	2	0	4	34	1.13744	1.00000	1.13744	1.09530	1.24583
1	2	2	0	5	34	0.99008	1.00824	0.99823	0.91300	0.91138
1	2	2	0	6	34	1.21966	1.00125	1.22118	1.00000	1.22118
1	2	2	0	2	35	0.98828	0.98134	0.96984	0.80263	0.77842
1	2	2	0	3	35	0.98668	1.01309	0.99960	0.94053	0.94016
1	2	2	0	4	35	0.98692	0.99723	0.98418	1.07881	1.06175
1	2	2	0	5	35	0.94448	0.99830	0.94287	1.09351	1.03104
1	2	2	0	6	35	1.03389	1.00328	1.03728	0.91958	0.95387
1	2	2	0	2	36	0.73146	1.00064	0.73193	1.00000	0.73193
1	2	2	0	3	36	0.92841	1.15114	1.06873	1.00000	1.06873
1	2	2	0	4	36	0.90817	1.02651	0.93225	1.00000	0.93225

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
1	2	2	1	3	30	1.01269	0.99757	1.01023	0.18543	0.18732
1	2	2	1	4	30	1.13122	0.93737	1.06038	4.39709	4.66257
1	2	2	1	5	30	0.73310	1.04245	0.76422	1.98101	1.51392
1	2	2	1	6	30	0.72020	0.99721	0.71819	0.86428	0.62072
1	2	2	1	2	31	1.23340	1.02738	1.26717	0.11421	0.14473
1	2	2	1	3	31	0.61607	0.99819	0.61496	2.45383	1.50899
1	2	2	1	4	31	0.98065	0.98165	0.96265	8.46253	8.14644
1	2	2	1	5	31	1.08789	1.00854	1.09719	0.10788	0.11836
1	2	2	1	6	31	0.82103	0.99525	0.81713	2.09272	1.71003
1	2	2	1	2	32	0.89735	1.07104	0.96109	1.92682	1.85186
1	2	2	1	3	32	0.99780	1.00529	1.00308	0.90934	0.91215
1	2	2	1	4	32	1.20145	1.06018	1.27376	0.43785	0.55771
1	2	2	1	5	32	2.25348	0.89390	2.01439	1.98953	4.00768
1	2	2	1	6	32	0.23076	1.01026	0.23313	1.25194	0.29186
1	2	2	1	2	33	1.09633	0.98629	1.08130	4.86245	5.25778
1	2	2	1	3	33	0.71794	0.98518	0.70730	0.17684	0.12508
1	2	2	1	4	33	1.11901	1.12754	1.26173	0.62815	0.79256
1	2	2	1	5	33	0.68893	0.93918	0.64704	2.38860	1.54551
1	2	2	1	6	33	1.52035	0.99801	1.51733	1.96800	2.98612
1	2	2	1	2	34	1.15879	0.99807	1.15656	0.49885	0.57694
1	2	2	1	3	34	0.98658	1.00348	0.99001	1.22846	1.21620
1	2	2	1	4	34	1.28164	0.97372	1.24797	2.11048	2.63380
1	2	2	1	5	34	0.28500	1.02046	0.29083	1.18747	0.34535
1	2	2	1	6	34	0.82434	1.01559	0.83719	0.89748	0.75136
1	2	2	1	2	35	1.09688	1.02694	1.12643	5.01010	5.64352
1	2	2	1	3	35	0.98908	1.00109	0.99016	0.42760	0.42340
1	2	2	1	4	35	1.08179	1.01334	1.09622	0.85679	0.93923
1	2	2	1	5	35	0.99391	0.98763	0.98161	0.80548	0.79067
1	2	2	1	6	35	0.71411	1.00699	0.71911	1.65367	1.18917
1	2	2	1	2	36	0.77820	0.99291	0.77268	1.05719	0.81686
1	2	2	1	3	36	0.92271	1.20883	1.11540	1.61170	1.79769
1	2	2	1	4	36	0.83794	0.98936	0.82903	0.59228	0.49102

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
1	2	2	0	5	36	1.13799	1.03484	1.17764	1.00000	1.17764
1	2	2	0	6	36	0.77116	1.00906	0.77814	1.00000	0.77814
1	2	2	0	2	37	0.92621	0.99881	0.92511	1.00000	0.92511
1	2	2	0	3	37	1.07617	1.01080	1.08780	1.12823	1.22728
1	2	2	0	4	37	0.94679	1.01124	0.95743	0.88635	0.84861
1	2	2	0	5	37	0.98956	1.00657	0.99606	1.04458	1.04047
1	2	2	0	6	37	0.99565	1.00045	0.99610	0.98588	0.98203
1	2	2	0	2	38	0.98505	1.00072	0.98576	1.13646	1.12028
1	2	2	0	3	38	0.96936	1.00269	0.97197	1.00768	0.97944
1	2	2	0	4	38	1.01801	0.99948	1.01748	0.61776	0.62855
1	2	2	0	5	38	0.99248	1.02462	1.01692	1.09819	1.11677
1	2	2	0	6	38	0.87582	1.02684	0.89932	1.38576	1.24624
1	2	2	0	2	39	0.95610	1.00199	0.95801	0.93890	0.89948
1	2	2	0	3	39	0.93078	1.09395	1.01823	1.00000	1.01823
1	2	2	0	4	39	1.00845	1.01658	1.02517	1.26383	1.29564
1	2	2	0	5	39	0.95473	0.96627	0.92253	0.97983	0.90392
1	2	2	0	6	39	0.97045	1.07234	1.04065	1.24015	1.29056
1	2	2	0	2	40	0.94298	1.00827	0.95078	1.03088	0.98014
1	2	2	0	3	40	0.96255	1.00462	0.96700	0.89924	0.86957
1	2	2	0	4	40	0.96948	1.01763	0.98657	1.07419	1.05976
1	2	2	0	5	40	0.97896	0.98544	0.96470	1.08007	1.04194
1	2	2	0	6	40	1.07149	1.00292	1.07461	0.86192	0.92623
1	2	2	0	2	41	1.06247	1.00015	1.06262	1.07601	1.14339
1	2	2	0	3	41	0.94764	1.01750	0.96423	1.24976	1.20506
1	2	2	0	4	41	0.98780	1.01006	0.99774	0.64336	0.64190
1	2	2	0	5	41	1.07613	0.98656	1.06167	0.88389	0.93840
1	2	2	0	6	41	0.93211	0.97729	0.91094	1.00000	0.91094
1	2	2	0	2	42	0.93445	1.00253	0.93681	0.63262	0.59265
1	2	2	0	3	42	1.02852	1.00109	1.02964	0.83142	0.85606
1	2	2	0	4	42	0.79675	1.29461	1.03148	1.61538	1.66623
1	2	2	0	5	42	1.04592	0.94069	0.98389	0.76254	0.75025
1	2	2	0	6	42	0.87432	0.99699	0.87169	1.14907	1.00163

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
1	2	2	1	5	36	1.18721	1.05843	1.25658	1.33443	1.67681
1	2	2	1	6	36	0.63135	0.99608	0.62887	0.97194	0.61122
1	2	2	1	2	37	1.04493	1.00462	1.04976	1.03336	1.08478
1	2	2	1	3	37	1.01622	1.01113	1.02753	0.28929	0.29726
1	2	2	1	4	37	1.27990	0.91820	1.17521	4.66460	5.48189
1	2	2	1	5	37	0.79678	0.93719	0.74673	0.71001	0.53019
1	2	2	1	6	37	0.72239	1.00204	0.72386	1.69103	1.22407
1	2	2	1	2	38	1.14427	1.00924	1.15484	0.93027	1.07431
1	2	2	1	3	38	1.00635	1.00009	1.00643	0.95232	0.95845
1	2	2	1	4	38	0.96093	0.99504	0.95616	1.02407	0.97918
1	2	2	1	5	38	1.01630	1.03065	1.04745	1.85339	1.94133
1	2	2	1	6	38	0.73440	1.01286	0.74384	0.61643	0.45853
1	2	2	1	2	39	0.84571	0.99801	0.84403	0.76139	0.64264
1	2	2	1	3	39	0.53032	1.07931	0.57238	1.95250	1.11757
1	2	2	1	4	39	1.81942	0.98821	1.79796	1.23725	2.22453
1	2	2	1	5	39	1.06549	0.98530	1.04983	0.53133	0.55780
1	2	2	1	6	39	1.11258	1.10297	1.22714	1.12152	1.37626
1	2	2	1	2	40	1.15481	0.98809	1.14105	0.20119	0.22957
1	2	2	1	3	40	0.98593	1.00175	0.98766	1.35232	1.33563
1	2	2	1	4	40	1.07217	0.98677	1.05799	1.88281	1.99200
1	2	2	1	5	40	0.91626	1.00357	0.91953	2.35713	2.16744
1	2	2	1	6	40	0.75962	1.00679	0.76477	0.28075	0.21471
1	2	2	1	2	41	1.20108	1.00097	1.20224	0.76064	0.91447
1	2	2	1	3	41	0.95229	1.01421	0.96582	0.82871	0.80039
1	2	2	1	4	41	1.16896	0.96215	1.12472	4.74772	5.33986
1	2	2	1	5	41	1.00776	0.93236	0.93959	0.25457	0.23919
1	2	2	1	6	41	1.34635	0.80709	1.08662	0.42971	0.46693
1	2	2	1	2	42	0.98650	0.94096	0.92826	0.59240	0.54990
1	2	2	1	3	42	0.55481	0.99594	0.55255	2.58986	1.43103
1	2	2	1	4	42	1.23405	1.50794	1.86088	0.73618	1.36994
1	2	2	1	5	42	1.04322	1.00477	1.04820	0.53816	0.56410
1	2	2	1	6	42	0.84135	1.02823	0.86511	1.14390	0.98959

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
1	2	2	0	2	43	0.96298	1.01528	0.97770	1.00000	0.97770
1	2	2	0	3	43	1.19586	1.00000	1.19586	1.00000	1.19586
1	2	2	0	4	43	1.00806	1.04121	1.04960	1.30231	1.36691
1	2	2	0	5	43	1.05852	0.99740	1.05578	0.76787	0.81069
1	2	2	0	6	43	1.01389	1.00157	1.01548	1.54281	1.56669
1	2	2	0	2	44	1.01313	1.02313	1.03657	0.83933	0.87002
1	2	2	0	3	44	0.98768	1.00106	0.98873	1.35509	1.33981
1	2	2	0	4	44	1.04134	0.99952	1.04084	0.86264	0.89787
1	2	2	0	5	44	0.91581	0.99232	0.90878	1.08911	0.98977
1	2	2	0	6	44	1.02680	0.98528	1.01168	0.78547	0.79464
1	2	2	0	2	45	1.19089	1.00108	1.19217	0.89709	1.06948
1	2	2	0	3	45	0.65185	1.00269	0.65361	1.46347	0.95653
1	2	2	0	4	45	1.04350	1.00388	1.04755	1.09977	1.15207
1	2	2	0	5	45	0.88414	1.01641	0.89864	0.97159	0.87311
1	2	2	0	6	45	1.09544	1.01102	1.10751	1.04280	1.15491
1	2	2	0	2	46	0.98366	0.99082	0.97462	0.91410	0.89090
1	2	2	0	3	46	1.13348	1.02703	1.16411	1.00886	1.17442
1	2	2	0	4	46	0.96248	1.00308	0.96544	0.99122	0.95697
1	2	2	0	5	46	0.91358	1.00774	0.92065	1.02260	0.94146
1	2	2	0	6	46	0.99038	1.00890	0.99919	0.97790	0.97711
1	2	2	0	2	47	1.01846	1.00764	1.02624	0.77248	0.79275
1	2	2	0	3	47	1.02540	1.02697	1.05306	1.00000	1.05306
1	2	2	0	4	47	0.99183	1.00347	0.99528	1.00000	0.99528
1	2	2	0	5	47	1.02790	1.00000	1.02790	1.00000	1.02790
1	2	2	0	6	47	0.97026	1.00000	0.97026	1.00000	0.97026
1	2	2	0	2	48	0.87791	1.04865	0.92061	1.00000	0.92061
1	2	2	0	3	48	1.04070	1.01457	1.05587	1.00000	1.05587
1	2	2	0	4	48	0.93721	0.97884	0.91738	1.06519	0.97719
1	2	2	0	5	48	0.94098	0.99973	0.94073	0.93880	0.88316
1	2	2	0	6	48	1.09653	1.04202	1.14261	1.00000	1.14261
1	2	2	0	2	49	0.94577	1.00759	0.95295	1.07376	1.02324
1	2	2	0	3	49	1.02076	1.00128	1.02207	0.93131	0.95186

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
1	2	2	1	2	43	0.69455	1.01897	0.70773	1.08686	0.76921
1	2	2	1	3	43	1.19971	1.00362	1.20405	1.06457	1.28180
1	2	2	1	4	43	1.03299	1.07159	1.10694	1.02295	1.13234
1	2	2	1	5	43	0.98292	1.03750	1.01978	0.72481	0.73914
1	2	2	1	6	43	0.98637	1.10341	1.08837	1.33952	1.45789
1	2	2	1	2	44	0.51978	1.01453	0.52733	2.11048	1.11291
1	2	2	1	3	44	2.02106	1.05587	2.13398	0.86802	1.85233
1	2	2	1	4	44	0.99966	1.00188	1.00154	0.90560	0.90699
1	2	2	1	5	44	0.98153	1.00765	0.98904	1.43276	1.41706
1	2	2	1	6	44	0.75379	0.99775	0.75210	0.76715	0.57698
1	2	2	1	2	45	1.77215	1.01867	1.80524	0.73636	1.32930
1	2	2	1	3	45	0.57563	1.00751	0.57995	1.29594	0.75158
1	2	2	1	4	45	0.97834	1.00051	0.97884	1.02046	0.99887
1	2	2	1	5	45	1.04810	1.00554	1.05391	1.05848	1.11554
1	2	2	1	6	45	0.86082	0.97856	0.84236	0.96930	0.81650
1	2	2	1	2	46	1.09246	1.01647	1.11045	1.66405	1.84784
1	2	2	1	3	46	1.10645	1.00963	1.11711	0.69478	0.77614
1	2	2	1	4	46	1.08226	1.00407	1.08666	0.90406	0.98241
1	2	2	1	5	46	0.80430	1.04335	0.83916	1.42816	1.19846
1	2	2	1	6	46	0.72049	1.00148	0.72156	3.11695	2.24906
1	2	2	1	2	47	0.23448	1.05421	0.24719	6.32428	1.56328
1	2	2	1	3	47	3.40461	1.31616	4.48102	0.33806	1.51485
1	2	2	1	4	47	0.40117	1.00053	0.40139	0.98756	0.39639
1	2	2	1	5	47	0.88488	1.03563	0.91641	1.79501	1.64496
1	2	2	1	6	47	0.70157	1.00659	0.70620	1.13109	0.79877
1	2	2	1	2	48	2.16429	0.92206	1.99560	1.43332	2.86033
1	2	2	1	3	48	1.01952	1.00010	1.01962	3.00319	3.06213
1	2	2	1	4	48	1.00614	1.02017	1.02643	0.20308	0.20844
1	2	2	1	5	48	0.73341	1.11155	0.81522	9.44790	7.70210
1	2	2	1	6	48	0.80993	1.04080	0.84298	0.30279	0.25524
1	2	2	1	2	49	1.11895	0.97671	1.09288	0.44094	0.48190
1	2	2	1	3	49	0.99497	0.99986	0.99483	3.29041	3.27340

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
1	2	2	0	4	49	0.95046	1.00319	0.95349	1.00000	0.95349
1	2	2	0	5	49	0.83577	1.00201	0.83745	1.00000	0.83745
1	2	2	0	6	49	1.12103	1.04233	1.16848	1.00023	1.16875
1	2	2	0	2	50	1.12506	0.99726	1.12198	1.03495	1.16119
1	2	2	0	3	50	1.00598	1.01161	1.01766	0.93528	0.95179
1	2	2	0	4	50	0.92115	1.00121	0.92227	0.98122	0.90494
1	2	2	0	5	50	1.11006	0.99614	1.10578	1.00000	1.10578
1	2	2	0	6	50	0.87551	1.03758	0.90841	1.24087	1.12722
-1	1	1	0	2	1	1.05382	1.00713	1.06134	1.10216	1.16976
-1	1	1	0	3	1	0.90790	0.98910	0.89801	0.52870	0.47477
-1	1	1	0	4	1	1.12979	1.00667	1.13732	1.42051	1.61559
-1	1	1	0	5	1	0.93475	0.99290	0.92812	1.50012	1.39229
-1	1	1	0	6	1	0.92677	0.99847	0.92536	0.59797	0.55333
-1	1	1	0	2	2	1.07208	1.00829	1.08097	1.03774	1.12176
-1	1	1	0	3	2	0.98066	1.01378	0.99418	0.59676	0.59329
-1	1	1	0	4	2	1.21831	1.09338	1.33208	1.90450	2.53694
-1	1	1	0	5	2	0.92671	0.99709	0.92401	0.51448	0.47538
-1	1	1	0	6	2	1.17973	1.02345	1.20740	1.32808	1.60353
-1	1	1	0	2	3	1.25025	0.96288	1.20385	0.52812	0.63578
-1	1	1	0	3	3	0.85248	0.85248	0.72672	1.89350	1.37605
-1	1	1	0	4	3	0.96947	1.03149	1.00000	1.00000	1.00000
-1	1	1	0	5	3	1.13768	1.00000	1.13768	1.00000	1.13768
-1	1	1	0	6	3	1.17589	0.97693	1.14876	1.00000	1.14876
-1	1	1	0	2	4	1.05425	1.00438	1.05887	0.69463	0.73552
-1	1	1	0	3	4	0.92214	1.02371	0.94400	1.00546	0.94915
-1	1	1	0	4	4	1.17908	1.03320	1.21823	0.81626	0.99439
-1	1	1	0	5	4	0.85154	0.96530	0.82199	1.36723	1.12384
-1	1	1	0	6	4	1.07591	0.99806	1.07382	1.19137	1.27932
-1	1	1	0	2	5	0.99887	1.02459	1.02343	0.46662	0.47755
-1	1	1	0	3	5	0.95107	0.94823	0.90184	1.66007	1.49711
-1	1	1	0	4	5	1.14032	1.04582	1.19257	1.35397	1.61470
-1	1	1	0	5	5	1.23954	0.99864	1.23785	0.52227	0.64649

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
1	2	2	1	4	49	1.33213	1.00855	1.34352	0.56302	0.75643
1	2	2	1	5	49	0.66291	0.97616	0.64711	1.44158	0.93286
1	2	2	1	6	49	0.76953	1.02695	0.79027	0.63434	0.50130
1	2	2	1	2	50	1.29369	0.98989	1.28062	0.42798	0.54808
1	2	2	1	3	50	1.00881	1.00529	1.01414	1.85311	1.87932
1	2	2	1	4	50	0.95433	1.00542	0.95951	0.87050	0.83525
1	2	2	1	5	50	1.11565	0.99041	1.10495	0.79408	0.87742
1	2	2	1	6	50	0.90308	0.93417	0.84364	0.81762	0.68977
-1	1	1	1	2	1	0.30172	1.00072	0.30193	2.44125	0.73710
-1	1	1	1	3	1	1.23837	1.00023	1.23866	0.94266	1.16764
-1	1	1	1	4	1	1.05290	0.99639	1.04910	1.01844	1.06844
-1	1	1	1	5	1	0.62535	1.00166	0.62639	0.96866	0.60675
-1	1	1	1	6	1	2.54997	0.99900	2.54742	0.51211	1.30457
-1	1	1	1	2	2	0.19861	1.00121	0.19885	3.90389	0.77629
-1	1	1	1	3	2	1.12992	0.99516	1.12445	0.91416	1.02792
-1	1	1	1	4	2	1.25849	1.00360	1.26302	0.72344	0.91372
-1	1	1	1	5	2	0.50922	0.99996	0.50920	2.24640	1.14387
-1	1	1	1	6	2	2.91158	0.99922	2.90932	0.28697	0.83489
-1	1	1	1	2	3	0.19211	0.99909	0.19193	7.32522	1.40594
-1	1	1	1	3	3	1.14842	1.00065	1.14916	0.60999	0.70097
-1	1	1	1	4	3	1.57948	0.99564	1.57259	0.64530	1.01479
-1	1	1	1	5	3	0.51323	0.99999	0.51323	2.93249	1.50503
-1	1	1	1	6	3	2.75727	0.99998	2.75721	0.34766	0.95857
-1	1	1	1	2	4	0.27693	1.01592	0.28133	4.98337	1.40200
-1	1	1	1	3	4	1.19925	1.00483	1.20505	0.67663	0.81537
-1	1	1	1	4	4	1.06657	1.00412	1.07096	1.18595	1.27011
-1	1	1	1	5	4	0.58702	0.99687	0.58518	1.24652	0.72943
-1	1	1	1	6	4	2.74552	0.99966	2.74458	0.32276	0.88584
-1	1	1	1	2	5	0.30296	0.99884	0.30261	6.25234	1.89201
-1	1	1	1	3	5	1.25967	0.99959	1.25915	0.40630	0.51160
-1	1	1	1	4	5	1.00102	0.99943	1.00045	0.64822	0.64852
-1	1	1	1	5	5	0.63784	1.00228	0.63929	2.08933	1.33569

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
-1	1	1	0	6	5	0.86565	1.00033	0.86594	1.16550	1.00925
-1	1	1	0	2	6	1.03079	0.98194	1.01218	1.02547	1.03796
-1	1	1	0	3	6	0.86535	0.99479	0.86085	0.89059	0.76666
-1	1	1	0	4	6	1.15885	0.99913	1.15784	0.63855	0.73934
-1	1	1	0	5	6	0.90565	1.00136	0.90688	1.56344	1.41785
-1	1	1	0	6	6	1.23987	0.99848	1.23800	0.90999	1.12656
-1	1	1	0	2	7	1.03460	0.95741	0.99054	1.00845	0.99891
-1	1	1	0	3	7	0.99619	1.03474	1.03080	0.70541	0.72714
-1	1	1	0	4	7	1.10236	1.00000	1.10236	1.02595	1.13097
-1	1	1	0	5	7	0.90733	1.00670	0.91340	1.38175	1.26210
-1	1	1	0	6	7	1.02029	1.03300	1.05395	0.60428	0.63689
-1	1	1	0	2	8	1.07175	1.09295	1.17137	1.36580	1.59985
-1	1	1	0	3	8	1.13648	0.98790	1.12273	0.51707	0.58053
-1	1	1	0	4	8	1.04146	1.07648	1.12111	2.61889	2.93608
-1	1	1	0	5	8	0.98484	1.01793	1.00249	0.77756	0.77950
-1	1	1	0	6	8	0.84245	1.11726	0.94124	0.75028	0.70619
-1	1	1	0	2	9	1.08458	0.95048	1.03087	0.44746	0.46127
-1	1	1	0	3	9	0.98160	1.02327	1.00443	2.57247	2.58388
-1	1	1	0	4	9	1.19190	1.00054	1.19254	1.00000	1.19254
-1	1	1	0	5	9	0.93825	1.00096	0.93915	0.59544	0.55921
-1	1	1	0	6	9	0.80899	0.98673	0.79825	1.67942	1.34060
-1	1	1	0	2	10	0.98702	0.99992	0.98694	0.57449	0.56699
-1	1	1	0	3	10	0.98465	1.03012	1.01430	1.74067	1.76557
-1	1	1	0	4	10	1.12164	0.97166	1.08985	0.28978	0.31582
-1	1	1	0	5	10	0.82304	0.99138	0.81595	2.86497	2.33766
-1	1	1	0	6	10	1.45170	1.00134	1.45365	0.73661	1.07077
-1	1	1	0	2	11	1.01213	0.99656	1.00865	0.37092	0.37412
-1	1	1	0	3	11	0.94345	1.00000	0.94345	2.75619	2.60031
-1	1	1	0	4	11	0.93409	0.97237	0.90829	0.73615	0.66863
-1	1	1	0	5	11	0.88565	0.98452	0.87194	0.66971	0.58395
-1	1	1	0	6	11	0.76873	1.00165	0.77000	1.51138	1.16377
-1	1	1	0	2	12	0.78936	1.00137	0.79044	1.42348	1.12518

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
-1	1	1	1	6	5	2.60087	0.99880	2.59774	0.49192	1.27789
-1	1	1	1	2	6	0.22167	1.00059	0.22181	4.17793	0.92669
-1	1	1	1	3	6	1.20641	1.00219	1.20905	1.08552	1.31245
-1	1	1	1	4	6	1.39727	0.99997	1.39723	0.70112	0.97962
-1	1	1	1	5	6	0.49800	0.99998	0.49799	1.85004	0.92130
-1	1	1	1	6	6	3.01050	1.00094	3.01335	0.33668	1.01454
-1	1	1	1	2	7	0.35047	1.00985	0.35392	2.42202	0.85720
-1	1	1	1	3	7	1.39601	0.99962	1.39548	0.90089	1.25717
-1	1	1	1	4	7	0.82201	1.00101	0.82284	1.09114	0.89783
-1	1	1	1	5	7	0.68004	0.99998	0.68003	1.28123	0.87127
-1	1	1	1	6	7	2.58184	1.00499	2.59473	0.39252	1.01847
-1	1	1	1	2	8	0.40390	1.00432	0.40564	2.16744	0.87920
-1	1	1	1	3	8	1.32779	0.99513	1.32132	1.04681	1.38318
-1	1	1	1	4	8	0.92661	1.01061	0.93644	0.44141	0.41336
-1	1	1	1	5	8	0.59437	1.00024	0.59451	1.84617	1.09757
-1	1	1	1	6	8	2.60281	0.99748	2.59626	0.62515	1.62307
-1	1	1	1	2	9	0.34015	1.00457	0.34170	2.25722	0.77130
-1	1	1	1	3	9	1.30403	0.99876	1.30241	0.71224	0.92763
-1	1	1	1	4	9	1.13389	0.99993	1.13382	0.94591	1.07249
-1	1	1	1	5	9	0.56176	1.00022	0.56188	1.84013	1.03393
-1	1	1	1	6	9	2.71426	0.99945	2.71278	0.39326	1.06683
-1	1	1	1	2	10	0.31736	1.00018	0.31741	4.20938	1.33610
-1	1	1	1	3	10	1.28157	1.02683	1.31595	0.24817	0.32658
-1	1	1	1	4	10	0.78394	0.99038	0.77640	2.15044	1.66959
-1	1	1	1	5	10	0.61055	0.99237	0.60589	1.65869	1.00499
-1	1	1	1	6	10	3.09769	0.99966	3.09665	0.30902	0.95692
-1	1	1	1	2	11	0.32551	1.00798	0.32810	6.49567	2.13126
-1	1	1	1	3	11	1.31361	0.99623	1.30866	0.58702	0.76820
-1	1	1	1	4	11	1.11252	0.99685	1.10902	0.77753	0.86230
-1	1	1	1	5	11	0.54332	0.99962	0.54311	1.99113	1.08141
-1	1	1	1	6	11	2.40940	1.00049	2.41059	0.60963	1.46958
-1	1	1	1	2	12	0.38135	0.99047	0.37772	1.83407	0.69276

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
-1	1	1	0	3	12	0.94090	0.99178	0.93317	0.57046	0.53234
-1	1	1	0	4	12	1.14246	1.02443	1.17037	1.47731	1.72900
-1	1	1	0	5	12	0.97608	0.97651	0.95315	0.63023	0.60070
-1	1	1	0	6	12	1.06387	0.98384	1.04668	1.61846	1.69400
-1	1	1	0	2	13	0.95462	0.57503	0.54894	0.80130	0.43986
-1	1	1	0	3	13	0.94949	0.98919	0.93923	0.83736	0.78647
-1	1	1	0	4	13	1.16886	1.03105	1.20515	1.49037	1.79612
-1	1	1	0	5	13	1.05058	1.03616	1.08857	0.71551	0.77889
-1	1	1	0	6	13	1.38134	1.00668	1.39056	0.73886	1.02743
-1	1	1	0	2	14	0.93827	0.99815	0.93653	1.27231	1.19156
-1	1	1	0	3	14	1.07528	0.96958	1.04256	1.29496	1.35008
-1	1	1	0	4	14	1.05489	1.04027	1.09737	0.60441	0.66326
-1	1	1	0	5	14	0.94438	0.98116	0.92659	0.70173	0.65021
-1	1	1	0	6	14	1.02597	1.00911	1.03532	1.15286	1.19358
-1	1	1	0	2	15	1.05468	0.99537	1.04980	1.46090	1.53365
-1	1	1	0	3	15	0.95977	1.00000	0.95977	1.02455	0.98333
-1	1	1	0	4	15	1.00623	1.00000	1.00623	0.77917	0.78402
-1	1	1	0	5	15	1.07465	1.00000	1.07465	0.63631	0.68381
-1	1	1	0	6	15	1.15981	1.01657	1.17902	1.14566	1.35076
-1	1	1	0	2	16	1.02489	1.00018	1.02508	0.75967	0.77872
-1	1	1	0	3	16	0.97192	0.99941	0.97135	1.03751	1.00779
-1	1	1	0	4	16	1.12896	1.00261	1.13191	1.04812	1.18637
-1	1	1	0	5	16	1.15117	0.97104	1.11784	0.97209	1.08664
-1	1	1	0	6	16	0.92763	1.00047	0.92807	1.21707	1.12952
-1	1	1	0	2	17	0.97212	1.00106	0.97315	0.97389	0.94775
-1	1	1	0	3	17	1.05109	0.99563	1.04650	0.74266	0.77719
-1	1	1	0	4	17	1.03164	1.00824	1.04014	1.91915	1.99619
-1	1	1	0	5	17	0.94584	0.93322	0.88268	0.73335	0.64731
-1	1	1	0	6	17	1.15198	1.01638	1.17085	0.96140	1.12566
-1	1	1	0	2	18	1.12142	0.97562	1.09408	1.40622	1.53852
-1	1	1	0	3	18	1.10980	0.90977	1.00966	0.74504	0.75224
-1	1	1	0	4	18	0.96142	1.02725	0.98762	1.34220	1.32558

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
-1	1	1	1	3	12	1.06690	1.00894	1.07644	1.82236	1.96166
-1	1	1	1	4	12	1.03602	1.00588	1.04211	0.63654	0.66334
-1	1	1	1	5	12	0.65566	0.99941	0.65528	1.99408	1.30668
-1	1	1	1	6	12	2.54108	1.00115	2.54399	0.24314	0.61855
-1	1	1	1	2	13	0.38037	1.01295	0.38530	7.79361	3.00285
-1	1	1	1	3	13	1.23345	1.00356	1.23784	0.98770	1.22261
-1	1	1	1	4	13	0.80360	1.00781	0.80988	0.57857	0.46857
-1	1	1	1	5	13	0.66971	1.00501	0.67307	2.38173	1.60306
-1	1	1	1	6	13	2.54631	1.00051	2.54759	0.73911	1.88295
-1	1	1	1	2	14	0.26332	1.00506	0.26465	3.86038	1.02166
-1	1	1	1	3	14	1.23510	1.00861	1.24573	0.44136	0.54981
-1	1	1	1	4	14	0.97310	0.99426	0.96752	1.39671	1.35134
-1	1	1	1	5	14	0.58770	1.00021	0.58782	2.15750	1.26822
-1	1	1	1	6	14	2.72917	1.00047	2.73045	0.19041	0.51991
-1	1	1	1	2	15	0.27819	0.99938	0.27802	3.57760	0.99463
-1	1	1	1	3	15	1.39071	1.00476	1.39733	0.58769	0.82120
-1	1	1	1	4	15	0.88731	0.99681	0.88448	1.36449	1.20686
-1	1	1	1	5	15	0.62431	0.99974	0.62415	1.67328	1.04437
-1	1	1	1	6	15	2.37799	1.00573	2.39163	0.34116	0.81594
-1	1	1	1	2	16	0.28689	1.00019	0.28694	3.84438	1.10313
-1	1	1	1	3	16	1.24879	1.00006	1.24887	0.77556	0.96858
-1	1	1	1	4	16	1.14157	1.00111	1.14283	0.93115	1.06415
-1	1	1	1	5	16	0.58117	0.99740	0.57966	1.34080	0.77720
-1	1	1	1	6	16	2.68180	1.00001	2.68183	0.31235	0.83767
-1	1	1	1	2	17	0.33564	0.99979	0.33557	2.83909	0.95271
-1	1	1	1	3	17	1.29799	1.00008	1.29810	0.83699	1.08649
-1	1	1	1	4	17	0.85206	1.00251	0.85420	0.77263	0.65998
-1	1	1	1	5	17	0.62822	1.00055	0.62856	1.95816	1.23083
-1	1	1	1	6	17	2.86434	1.00414	2.87619	0.38710	1.11339
-1	1	1	1	2	18	0.31642	1.00005	0.31643	4.21119	1.33255
-1	1	1	1	3	18	1.36743	1.00058	1.36822	0.58438	0.79956
-1	1	1	1	4	18	0.92024	0.99965	0.91992	1.26805	1.16650

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
-1	1	1	0	5	18	0.85843	0.99170	0.85131	1.00000	0.85131
-1	1	1	0	6	18	1.07308	1.01092	1.08480	1.00000	1.08480
-1	1	1	0	2	19	0.93864	1.05439	0.98969	0.87089	0.86191
-1	1	1	0	3	19	1.10419	0.99253	1.09594	0.95645	1.04821
-1	1	1	0	4	19	0.96122	1.00115	0.96232	0.79102	0.76122
-1	1	1	0	5	19	1.08044	1.05260	1.13727	2.09619	2.38393
-1	1	1	0	6	19	1.05735	1.05735	1.11800	1.00000	1.11800
-1	1	1	0	2	20	0.99244	1.13135	1.12279	1.78422	2.00331
-1	1	1	0	3	20	0.95608	0.96426	0.92191	0.76086	0.70145
-1	1	1	0	4	20	0.96066	1.01255	0.97271	0.66239	0.64431
-1	1	1	0	5	20	0.95569	1.00139	0.95702	0.78413	0.75043
-1	1	1	0	6	20	0.98115	0.98926	0.97062	1.63924	1.59108
-1	1	1	0	2	21	0.93978	0.99682	0.93680	0.59931	0.56144
-1	1	1	0	3	21	0.92558	0.99881	0.92448	1.49052	1.37796
-1	1	1	0	4	21	1.19443	1.05172	1.25620	1.05870	1.32994
-1	1	1	0	5	21	1.03165	1.01036	1.04234	1.03835	1.08231
-1	1	1	0	6	21	1.09819	0.99627	1.09410	0.83444	0.91296
-1	1	1	0	2	22	1.02777	0.94304	0.96923	0.64372	0.62392
-1	1	1	0	3	22	1.07822	1.07989	1.16436	1.48752	1.73200
-1	1	1	0	4	22	0.93795	0.97509	0.91459	0.92376	0.84485
-1	1	1	0	5	22	0.90075	1.02054	0.91925	0.78887	0.72516
-1	1	1	0	6	22	1.24643	1.07118	1.33516	0.97738	1.30495
-1	1	1	0	2	23	1.05182	0.93787	0.98648	0.48346	0.47692
-1	1	1	0	3	23	0.94776	1.01724	0.96410	1.07005	1.03163
-1	1	1	0	4	23	1.14100	0.99800	1.13872	1.93303	2.20118
-1	1	1	0	5	23	1.02897	1.07286	1.10394	0.93381	1.03086
-1	1	1	0	6	23	1.38125	1.02315	1.41322	0.69622	0.98392
-1	1	1	0	2	24	1.01010	1.00997	1.02017	1.00000	1.02017
-1	1	1	0	3	24	0.99064	1.00945	1.00000	1.00000	1.00000
-1	1	1	0	4	24	1.00000	1.00000	1.00000	1.00000	1.00000
-1	1	1	0	5	24	0.99983	0.95885	0.95869	1.00000	0.95869
-1	1	1	0	6	24	1.15762	0.96692	1.11932	1.00000	1.11932

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
-1	1	1	1	5	18	0.63466	0.99925	0.63419	1.08136	0.68578
-1	1	1	1	6	18	2.53040	1.00000	2.53041	0.42325	1.07099
-1	1	1	1	2	19	0.30269	0.99927	0.30247	3.14878	0.95240
-1	1	1	1	3	19	1.29487	0.99977	1.29457	0.64968	0.84105
-1	1	1	1	4	19	0.79902	0.99991	0.79895	1.37023	1.09475
-1	1	1	1	5	19	0.66775	1.00994	0.67438	0.57303	0.38644
-1	1	1	1	6	19	2.95340	0.99029	2.92473	0.15958	0.46672
-1	1	1	1	2	20	0.45000	1.02665	0.46199	1.19536	0.55225
-1	1	1	1	3	20	1.21464	1.00091	1.21575	1.25849	1.53000
-1	1	1	1	4	20	0.88380	1.00389	0.88724	1.02525	0.90965
-1	1	1	1	5	20	0.72046	1.00010	0.72053	1.33824	0.96425
-1	1	1	1	6	20	2.32938	1.00734	2.34647	0.38830	0.91114
-1	1	1	1	2	21	0.28981	1.00023	0.28987	4.92619	1.42798
-1	1	1	1	3	21	1.20980	0.99975	1.20951	0.81961	0.99133
-1	1	1	1	4	21	1.08455	1.00413	1.08902	0.56157	0.61156
-1	1	1	1	5	21	0.60085	1.00033	0.60105	1.88792	1.13473
-1	1	1	1	6	21	2.89490	1.00297	2.90350	0.35190	1.02173
-1	1	1	1	2	22	0.26270	0.98273	0.25816	4.85750	1.25402
-1	1	1	1	3	22	1.26162	0.96002	1.21119	0.44064	0.53369
-1	1	1	1	4	22	0.88157	1.01421	0.89410	1.02568	0.91706
-1	1	1	1	5	22	0.59989	1.00748	0.60438	3.19531	1.93119
-1	1	1	1	6	22	2.11729	0.99660	2.11009	0.43030	0.90797
-1	1	1	1	2	23	0.27003	0.99151	0.26774	6.01966	1.61170
-1	1	1	1	3	23	1.25325	0.99278	1.24420	0.54688	0.68043
-1	1	1	1	4	23	0.95975	0.99973	0.95949	0.94439	0.90613
-1	1	1	1	5	23	0.57025	1.00198	0.57138	1.47486	0.84270
-1	1	1	1	6	23	3.06236	0.99982	3.06181	0.36037	1.10337
-1	1	1	1	2	24	0.12525	0.99985	0.12523	7.68613	0.96252
-1	1	1	1	3	24	0.90768	0.99982	0.90752	1.31112	1.18986
-1	1	1	1	4	24	2.61828	1.00331	2.62694	0.29631	0.77839
-1	1	1	1	5	24	0.38913	0.99806	0.38837	3.48327	1.35280
-1	1	1	1	6	24	4.05302	0.99982	4.05230	0.23983	0.97186

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
-1	1	1	0	2	25	1.03800	0.99381	1.03157	1.74620	1.80133
-1	1	1	0	3	25	1.08830	0.97928	1.06575	0.75131	0.80071
-1	1	1	0	4	25	1.03066	0.99004	1.02039	1.20111	1.22560
-1	1	1	0	5	25	0.91248	0.99707	0.90980	1.10815	1.00820
-1	1	1	0	6	25	1.10769	1.03488	1.14632	0.51512	0.59049
-1	1	1	0	2	26	1.00043	0.99990	1.00033	1.50187	1.50236
-1	1	1	0	3	26	0.96548	1.00068	0.96613	0.65074	0.62870
-1	1	1	0	4	26	1.06759	0.99859	1.06608	0.76316	0.81358
-1	1	1	0	5	26	0.91251	0.93444	0.85269	1.33788	1.14079
-1	1	1	0	6	26	1.28629	1.00052	1.28696	0.70325	0.90506
-1	1	1	0	2	27	1.04073	1.05252	1.09539	1.80475	1.97692
-1	1	1	0	3	27	0.92881	1.06431	0.98854	0.67328	0.66557
-1	1	1	0	4	27	1.06012	1.05299	1.11630	1.48526	1.65799
-1	1	1	0	5	27	0.97435	0.94088	0.91675	0.70681	0.64797
-1	1	1	0	6	27	1.28628	0.99288	1.27713	0.82779	1.05719
-1	1	1	0	2	28	1.12936	1.00219	1.13183	0.87592	0.99139
-1	1	1	0	3	28	0.94792	0.98113	0.93003	1.52902	1.42203
-1	1	1	0	4	28	1.03154	1.00029	1.03183	0.76012	0.78432
-1	1	1	0	5	28	0.89274	0.99983	0.89258	1.42108	1.26842
-1	1	1	0	6	28	1.33035	1.00075	1.33134	0.75142	1.00040
-1	1	1	0	2	29	1.01980	0.98510	1.00461	0.75781	0.76130
-1	1	1	0	3	29	1.12544	0.96317	1.08399	2.39621	2.59747
-1	1	1	0	4	29	0.96420	1.01534	0.97899	0.81015	0.79313
-1	1	1	0	5	29	0.99742	0.94030	0.93787	1.23434	1.15765
-1	1	1	0	6	29	0.94989	1.06534	1.01195	0.41646	0.42144
-1	1	1	0	2	30	1.06345	1.00400	1.06771	1.24606	1.33042
-1	1	1	0	3	30	0.93508	0.98897	0.92476	1.09046	1.00841
-1	1	1	0	4	30	1.15124	1.04277	1.20047	0.86283	1.03581
-1	1	1	0	5	30	0.93887	1.00564	0.94416	1.02542	0.96816
-1	1	1	0	6	30	0.97375	1.03979	1.01250	1.63337	1.65379
-1	1	1	0	2	31	1.06631	0.91883	0.97976	0.95929	0.93988
-1	1	1	0	3	31	0.92455	1.00070	0.92520	1.04243	0.96446

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
-1	1	1	1	2	25	0.37395	0.99362	0.37157	1.32928	0.49392
-1	1	1	1	3	25	1.31309	0.99973	1.31274	1.14285	1.50026
-1	1	1	1	4	25	1.22228	1.00314	1.22612	0.73632	0.90282
-1	1	1	1	5	25	0.54237	0.99938	0.54203	1.84622	1.00070
-1	1	1	1	6	25	2.72254	1.00093	2.72508	0.62608	1.70611
-1	1	1	1	2	26	0.19565	0.99816	0.19529	4.68735	0.91539
-1	1	1	1	3	26	1.12889	1.00008	1.12898	1.07707	1.21598
-1	1	1	1	4	26	1.38356	1.00007	1.38366	0.85310	1.18040
-1	1	1	1	5	26	0.57949	0.99533	0.57678	1.44453	0.83318
-1	1	1	1	6	26	2.77147	1.00099	2.77422	0.40781	1.13135
-1	1	1	1	2	27	0.35181	1.01432	0.35685	1.72374	0.61512
-1	1	1	1	3	27	1.31186	0.99680	1.30766	1.07790	1.40953
-1	1	1	1	4	27	0.90583	1.00999	0.91488	0.69656	0.63727
-1	1	1	1	5	27	0.62249	0.99862	0.62163	2.43589	1.51422
-1	1	1	1	6	27	2.55940	0.99960	2.55838	0.45443	1.16261
-1	1	1	1	2	28	0.31541	1.00012	0.31545	3.78401	1.19365
-1	1	1	1	3	28	1.18241	1.00121	1.18384	0.68851	0.81508
-1	1	1	1	4	28	1.44174	0.99988	1.44156	0.71023	1.02384
-1	1	1	1	5	28	0.49346	1.00000	0.49346	1.79898	0.88772
-1	1	1	1	6	28	3.13695	1.00013	3.13735	0.29809	0.93520
-1	1	1	1	2	29	0.28699	0.99906	0.28672	3.56612	1.02247
-1	1	1	1	3	29	1.20114	1.01380	1.21772	0.33739	0.41084
-1	1	1	1	4	29	1.23123	1.01840	1.25389	1.75846	2.20492
-1	1	1	1	5	29	0.57212	0.98682	0.56457	0.73477	0.41483
-1	1	1	1	6	29	2.70528	1.00226	2.71140	1.05008	2.84718
-1	1	1	1	2	30	0.26237	1.00079	0.26258	3.25783	0.85544
-1	1	1	1	3	30	1.21679	1.00033	1.21718	0.67954	0.82713
-1	1	1	1	4	30	1.29760	1.00486	1.30391	0.85114	1.10981
-1	1	1	1	5	30	0.50521	0.99995	0.50519	2.15896	1.09068
-1	1	1	1	6	30	3.01028	0.99749	3.00274	0.23999	0.72061
-1	1	1	1	2	31	0.27139	0.99983	0.27134	3.07876	0.83539
-1	1	1	1	3	31	1.17356	0.99808	1.17131	0.69870	0.81839

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
-1	1	1	0	4	31	1.06326	1.00575	1.06938	1.00000	1.06938
-1	1	1	0	5	31	1.22141	0.79057	0.96560	0.83323	0.80457
-1	1	1	0	6	31	0.85221	1.02944	0.87730	0.79219	0.69499
-1	1	1	0	2	32	1.10881	0.95667	1.06077	1.00000	1.06077
-1	1	1	0	3	32	0.94276	1.06071	1.00000	1.00000	1.00000
-1	1	1	0	4	32	1.28523	1.00000	1.28523	1.00000	1.28523
-1	1	1	0	5	32	0.93103	0.94797	0.88259	1.00000	0.88259
-1	1	1	0	6	32	1.08009	0.92585	1.00000	1.00000	1.00000
-1	1	1	0	2	33	1.05320	0.95676	1.00766	0.73573	0.74136
-1	1	1	0	3	33	1.01329	1.01329	1.02676	2.54691	2.61507
-1	1	1	0	4	33	0.98277	1.04494	1.02693	1.00000	1.02693
-1	1	1	0	5	33	0.93937	0.97423	0.91516	1.00000	0.91516
-1	1	1	0	6	33	1.14455	0.95826	1.09678	0.41585	0.45610
-1	1	1	0	2	34	0.94276	0.97200	0.91636	1.38279	1.26714
-1	1	1	0	3	34	1.05484	1.01698	1.07275	1.75354	1.88112
-1	1	1	0	4	34	1.00642	0.95607	0.96220	0.51431	0.49487
-1	1	1	0	5	34	1.09324	0.93724	1.02462	1.94437	1.99225
-1	1	1	0	6	34	0.88894	1.05911	0.94149	0.74140	0.69802
-1	1	1	0	2	35	0.93704	1.00052	0.93753	0.81665	0.76563
-1	1	1	0	3	35	0.94757	1.01047	0.95749	1.88200	1.80199
-1	1	1	0	4	35	1.07127	1.02750	1.10073	0.84228	0.92712
-1	1	1	0	5	35	0.93723	0.99490	0.93245	1.04440	0.97385
-1	1	1	0	6	35	1.07225	1.00733	1.08012	0.83916	0.90639
-1	1	1	0	2	36	0.92697	1.02379	0.94901	1.00000	0.94901
-1	1	1	0	3	36	1.03197	1.01479	1.04724	1.00000	1.04724
-1	1	1	0	4	36	0.97263	0.97798	0.95121	1.00000	0.95121
-1	1	1	0	5	36	0.90570	0.94476	0.85567	0.91309	0.78130
-1	1	1	0	6	36	1.29863	1.03028	1.33795	1.09518	1.46530
-1	1	1	0	2	37	1.27699	1.00094	1.27818	1.03680	1.32522
-1	1	1	0	3	37	0.96962	0.98978	0.95970	0.87000	0.83494
-1	1	1	0	4	37	1.08154	1.04642	1.13174	1.06419	1.20438
-1	1	1	0	5	37	1.21293	0.99930	1.21208	0.87094	1.05565

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
-1	1	1	1	4	31	1.01908	1.01132	1.03062	1.00487	1.03564
-1	1	1	1	5	31	0.62953	0.99880	0.62878	1.49833	0.94211
-1	1	1	1	6	31	2.61648	1.00114	2.61945	0.28019	0.73395
-1	1	1	1	2	32	0.14503	0.99967	0.14498	6.27283	0.90943
-1	1	1	1	3	32	0.99279	1.00008	0.99288	1.04548	1.03803
-1	1	1	1	4	32	2.10259	1.00045	2.10354	0.43317	0.91118
-1	1	1	1	5	32	0.43745	1.00000	0.43745	2.33218	1.02021
-1	1	1	1	6	32	3.44375	1.00004	3.44390	0.27353	0.94202
-1	1	1	1	2	33	0.38790	1.01124	0.39226	2.81727	1.10509
-1	1	1	1	3	33	1.31666	0.99793	1.31394	0.24855	0.32658
-1	1	1	1	4	33	1.01536	1.00288	1.01828	1.05869	1.07805
-1	1	1	1	5	33	0.60766	0.99911	0.60712	1.47690	0.89665
-1	1	1	1	6	33	2.23707	1.00884	2.25684	1.24778	2.81605
-1	1	1	1	2	34	0.29274	0.99689	0.29183	2.64468	0.77180
-1	1	1	1	3	34	1.25892	1.00319	1.26293	0.52245	0.65982
-1	1	1	1	4	34	0.99355	0.99387	0.98745	1.55107	1.53160
-1	1	1	1	5	34	0.60689	0.99972	0.60672	0.89959	0.54581
-1	1	1	1	6	34	2.81612	0.99652	2.80631	0.58914	1.65332
-1	1	1	1	2	35	0.25952	0.99904	0.25927	4.05539	1.05146
-1	1	1	1	3	35	1.22412	0.99931	1.22328	0.85569	1.04675
-1	1	1	1	4	35	1.29026	0.99993	1.29017	0.68973	0.88987
-1	1	1	1	5	35	0.53871	0.99996	0.53869	1.82411	0.98263
-1	1	1	1	6	35	2.86582	0.99918	2.86347	0.43743	1.25257
-1	1	1	1	2	36	0.33830	1.00224	0.33906	3.51320	1.19120
-1	1	1	1	3	36	1.29852	1.00086	1.29963	0.93658	1.21721
-1	1	1	1	4	36	0.93811	0.99641	0.93474	0.75412	0.70491
-1	1	1	1	5	36	0.61950	0.99854	0.61859	2.92046	1.80658
-1	1	1	1	6	36	2.27457	0.99792	2.26983	0.24835	0.56372
-1	1	1	1	2	37	0.19100	0.99966	0.19093	5.04797	0.96382
-1	1	1	1	3	37	1.16259	1.00080	1.16352	0.84473	0.98286
-1	1	1	1	4	37	1.31334	0.99869	1.31162	0.87437	1.14684
-1	1	1	1	5	37	0.52298	1.00002	0.52299	1.76070	0.92083

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
-1	1	1	0	6	37	0.89995	1.00874	0.90782	1.10576	1.00382
-1	1	1	0	2	38	0.97965	1.04450	1.02324	0.90491	0.92595
-1	1	1	0	3	38	0.99600	0.98016	0.97624	1.01516	0.99104
-1	1	1	0	4	38	1.18882	0.98430	1.17016	1.58969	1.86019
-1	1	1	0	5	38	0.89587	1.01242	0.90699	0.70904	0.64309
-1	1	1	0	6	38	1.48419	0.96503	1.43230	0.81839	1.17217
-1	1	1	0	2	39	1.14174	1.00000	1.14174	1.06730	1.21858
-1	1	1	0	3	39	1.10305	0.96132	1.06039	1.01723	1.07866
-1	1	1	0	4	39	0.95034	0.95768	0.91013	0.58996	0.53694
-1	1	1	0	5	39	0.99342	1.00000	0.99342	1.30964	1.30103
-1	1	1	0	6	39	1.12664	1.02484	1.15463	0.69832	0.80630
-1	1	1	0	2	40	1.04909	1.01234	1.06203	1.81503	1.92762
-1	1	1	0	3	40	0.95860	1.00620	0.96454	1.37628	1.32748
-1	1	1	0	4	40	1.00013	0.99630	0.99643	0.71944	0.71687
-1	1	1	0	5	40	0.99108	0.98413	0.97536	0.59836	0.58361
-1	1	1	0	6	40	0.86722	1.09191	0.94692	2.13919	2.02565
-1	1	1	0	2	41	0.98226	1.00016	0.98242	0.87473	0.85935
-1	1	1	0	3	41	1.01519	1.00565	1.02092	0.74237	0.75790
-1	1	1	0	4	41	1.15364	1.00072	1.15447	0.95008	1.09685
-1	1	1	0	5	41	0.87146	0.99788	0.86961	1.98633	1.72733
-1	1	1	0	6	41	1.12282	0.96986	1.08898	0.48557	0.52878
-1	1	1	0	2	42	1.07056	0.94964	1.01664	2.32922	2.36798
-1	1	1	0	3	42	1.05586	1.22748	1.29605	1.20806	1.56571
-1	1	1	0	4	42	0.76888	0.91624	0.70448	0.47346	0.33355
-1	1	1	0	5	42	0.98087	1.00150	0.98234	1.34199	1.31829
-1	1	1	0	6	42	1.07695	1.00106	1.07810	0.91427	0.98567
-1	1	1	0	2	43	0.95781	0.95967	0.91918	0.85062	0.78187
-1	1	1	0	3	43	0.94142	1.00853	0.94945	0.86547	0.82172
-1	1	1	0	4	43	0.96561	1.01666	0.98169	0.60777	0.59665
-1	1	1	0	5	43	0.97350	0.97941	0.95345	1.69499	1.61610
-1	1	1	0	6	43	0.79040	0.99988	0.79031	0.77554	0.61292
-1	1	1	0	2	44	0.93582	1.02098	0.95545	1.37560	1.31433

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
-1	1	1	1	6	37	2.88939	0.99982	2.88888	0.36162	1.04468
-1	1	1	1	2	38	0.39195	1.00079	0.39226	1.57560	0.61805
-1	1	1	1	3	38	1.30895	0.99848	1.30696	1.02724	1.34256
-1	1	1	1	4	38	0.89142	1.01432	0.90418	0.64965	0.58740
-1	1	1	1	5	38	0.69576	1.00117	0.69657	1.66429	1.15930
-1	1	1	1	6	38	2.46235	0.99973	2.46168	0.44934	1.10612
-1	1	1	1	2	39	0.39943	1.00003	0.39944	2.23113	0.89121
-1	1	1	1	3	39	1.38302	0.99232	1.37240	0.32049	0.43985
-1	1	1	1	4	39	0.79559	1.01267	0.80567	2.79558	2.25230
-1	1	1	1	5	39	0.65214	1.00016	0.65224	1.31282	0.85628
-1	1	1	1	6	39	2.07360	0.99385	2.06084	0.80228	1.65338
-1	1	1	1	2	40	0.31092	1.00050	0.31107	2.89484	0.90051
-1	1	1	1	3	40	1.26135	0.99756	1.25827	0.54144	0.68128
-1	1	1	1	4	40	1.05512	1.00092	1.05609	1.29938	1.37226
-1	1	1	1	5	40	0.61916	0.99830	0.61811	1.37268	0.84847
-1	1	1	1	6	40	2.53842	0.99795	2.53321	0.32700	0.82837
-1	1	1	1	2	41	0.18165	1.00032	0.18171	5.84051	1.06126
-1	1	1	1	3	41	1.01843	0.99880	1.01721	1.10084	1.11978
-1	1	1	1	4	41	1.27068	0.99773	1.26780	0.76232	0.96647
-1	1	1	1	5	41	0.52100	0.99999	0.52100	1.51818	0.79096
-1	1	1	1	6	41	2.95845	1.00384	2.96981	0.36952	1.09740
-1	1	1	1	2	42	0.54951	1.04827	0.57603	0.99107	0.57089
-1	1	1	1	3	42	1.00667	0.97698	0.98349	1.00901	0.99235
-1	1	1	1	4	42	1.39240	1.01560	1.41412	1.11960	1.58325
-1	1	1	1	5	42	0.70023	0.99932	0.69975	1.82900	1.27984
-1	1	1	1	6	42	2.02210	0.99985	2.02179	0.48834	0.98732
-1	1	1	1	2	43	0.41136	0.99853	0.41076	3.72645	1.53067
-1	1	1	1	3	43	1.07625	0.99684	1.07285	1.08967	1.16906
-1	1	1	1	4	43	1.00829	1.00941	1.01778	1.00845	1.02638
-1	1	1	1	5	43	0.66317	1.00247	0.66481	0.94933	0.63112
-1	1	1	1	6	43	2.35149	0.99979	2.35099	0.53189	1.25046
-1	1	1	1	2	44	0.19860	0.99001	0.19661	2.47062	0.48575

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
-1	1	1	0	3	44	0.96519	1.00404	0.96909	0.62101	0.60181
-1	1	1	0	4	44	1.04669	0.98256	1.02843	1.15775	1.19067
-1	1	1	0	5	44	1.13675	1.00124	1.13816	0.63850	0.72672
-1	1	1	0	6	44	1.01059	0.94826	0.95830	1.85128	1.77408
-1	1	1	0	2	45	0.96331	0.99058	0.95424	0.98024	0.93538
-1	1	1	0	3	45	1.17557	0.99725	1.17234	0.95414	1.11858
-1	1	1	0	4	45	0.87827	1.00360	0.88143	0.94878	0.83629
-1	1	1	0	5	45	1.01907	0.99767	1.01670	1.09485	1.11313
-1	1	1	0	6	45	0.82024	0.99979	0.82007	1.11014	0.91039
-1	1	1	0	2	46	0.98059	1.01018	0.99058	1.26906	1.25711
-1	1	1	0	3	46	0.98292	1.00960	0.99236	0.71791	0.71243
-1	1	1	0	4	46	1.11010	0.99005	1.09905	1.15986	1.27473
-1	1	1	0	5	46	1.39730	1.01516	1.41849	0.78128	1.10823
-1	1	1	0	6	46	0.66564	0.95572	0.63617	1.53717	0.97789
-1	1	1	0	2	47	0.94459	0.99459	0.93948	1.45779	1.36957
-1	1	1	0	3	47	0.98351	0.94990	0.93424	1.00000	0.93424
-1	1	1	0	4	47	1.01671	0.99359	1.01019	1.00000	1.01019
-1	1	1	0	5	47	1.07793	1.00070	1.07869	1.00000	1.07869
-1	1	1	0	6	47	1.15189	1.04774	1.20689	1.00000	1.20689
-1	1	1	0	2	48	0.98894	0.94509	0.93463	1.00000	0.93463
-1	1	1	0	3	48	1.00000	1.00000	1.00000	1.00000	1.00000
-1	1	1	0	4	48	1.39146	1.04395	1.45261	0.87048	1.26447
-1	1	1	0	5	48	1.03911	0.95867	0.99617	1.14879	1.14439
-1	1	1	0	6	48	1.06604	0.90942	0.96948	1.00000	0.96948
-1	1	1	0	2	49	0.87980	0.98250	0.86441	1.13797	0.98367
-1	1	1	0	3	49	1.02044	0.99328	1.01358	1.00416	1.01779
-1	1	1	0	4	49	1.09142	1.02301	1.11654	1.37739	1.53791
-1	1	1	0	5	49	1.04477	0.98483	1.02892	1.07604	1.10716
-1	1	1	0	6	49	1.21180	0.96129	1.16489	0.62149	0.72397
-1	1	1	0	2	50	0.96071	0.99125	0.95230	0.98335	0.93645
-1	1	1	0	3	50	0.91426	1.00074	0.91494	1.20268	1.10038
-1	1	1	0	4	50	1.25911	0.98179	1.23618	1.08349	1.33939

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
-1	1	1	1	3	44	1.18070	1.00084	1.18169	1.20051	1.41863
-1	1	1	1	4	44	1.05352	1.00706	1.06095	0.81038	0.85977
-1	1	1	1	5	44	0.60237	0.99987	0.60229	2.11036	1.27105
-1	1	1	1	6	44	2.76451	0.99371	2.74713	0.15174	0.41685
-1	1	1	1	2	45	0.57501	1.00057	0.57533	1.92471	1.10735
-1	1	1	1	3	45	1.23927	1.00013	1.23944	0.76947	0.95371
-1	1	1	1	4	45	0.88495	1.00044	0.88533	1.39814	1.23782
-1	1	1	1	5	45	0.69005	1.00004	0.69008	1.58060	1.09075
-1	1	1	1	6	45	2.19203	1.00053	2.19320	0.35728	0.78358
-1	1	1	1	2	46	0.31995	1.00002	0.31995	2.66012	0.85111
-1	1	1	1	3	46	1.28216	0.99840	1.28011	1.03827	1.32910
-1	1	1	1	4	46	0.98869	1.00029	0.98898	0.89015	0.88034
-1	1	1	1	5	46	0.57718	0.99959	0.57695	1.92891	1.11288
-1	1	1	1	6	46	2.75722	1.00434	2.76919	0.32475	0.89929
-1	1	1	1	2	47	0.26481	1.00094	0.26506	3.17297	0.84104
-1	1	1	1	3	47	1.20909	1.00002	1.20911	0.97223	1.17553
-1	1	1	1	4	47	1.17361	1.00008	1.17370	0.81388	0.95525
-1	1	1	1	5	47	0.52906	0.99983	0.52897	2.03507	1.07649
-1	1	1	1	6	47	3.05744	1.00093	3.06028	0.30598	0.93639
-1	1	1	1	2	48	0.25048	0.99888	0.25020	4.16321	1.04163
-1	1	1	1	3	48	1.28709	0.99718	1.28346	0.74904	0.96136
-1	1	1	1	4	48	1.09893	1.00395	1.10327	0.91565	1.01021
-1	1	1	1	5	48	0.57576	0.99881	0.57508	1.91683	1.10233
-1	1	1	1	6	48	2.50139	1.00092	2.50370	0.42536	1.06498
-1	1	1	1	2	49	0.30304	0.99991	0.30301	3.38126	1.02456
-1	1	1	1	3	49	1.24851	0.99812	1.24616	0.65824	0.82028
-1	1	1	1	4	49	1.09642	1.00006	1.09649	0.83194	0.91220
-1	1	1	1	5	49	0.56227	0.99921	0.56182	1.40814	0.79113
-1	1	1	1	6	49	2.94605	1.00042	2.94729	0.42444	1.25096
-1	1	1	1	2	50	0.28165	1.00189	0.28218	2.90652	0.82017
-1	1	1	1	3	50	1.16852	0.99898	1.16732	0.75254	0.87846
-1	1	1	1	4	50	0.98075	1.00772	0.98832	0.81137	0.80189

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
-1	1	1	0	5	50	0.82685	1.11272	0.92005	1.00671	0.92622
-1	1	1	0	6	50	1.47733	1.00299	1.48175	0.63170	0.93602
-1	2	1	0	2	1	1.05152	0.99183	1.04293	1.13420	1.18289
-1	2	1	0	3	1	1.13667	0.94930	1.07905	0.59106	0.63778
-1	2	1	0	4	1	1.10257	0.98624	1.08740	1.28021	1.39210
-1	2	1	0	5	1	0.93793	0.97956	0.91876	1.44993	1.33213
-1	2	1	0	6	1	0.92511	0.95950	0.88764	0.61874	0.54922
-1	2	1	0	2	2	1.02826	0.99148	1.01950	1.14590	1.16825
-1	2	1	0	3	2	1.16232	1.00043	1.16282	0.57801	0.67212
-1	2	1	0	4	2	1.09757	1.02317	1.12300	1.55075	1.74150
-1	2	1	0	5	2	0.89617	0.99631	0.89286	0.77528	0.69222
-1	2	1	0	6	2	1.05863	0.98524	1.04301	1.10297	1.15041
-1	2	1	0	2	3	1.04379	0.96496	1.00722	0.83995	0.84601
-1	2	1	0	3	3	0.95733	0.95733	0.91649	1.19055	1.09112
-1	2	1	0	4	3	1.00000	1.00000	1.00000	1.00000	1.00000
-1	2	1	0	5	3	0.84498	1.00000	0.84498	1.00000	0.84498
-1	2	1	0	6	3	1.00108	0.99562	0.99670	1.00000	0.99670
-1	2	1	0	2	4	0.98317	1.02657	1.00929	0.78043	0.78767
-1	2	1	0	3	4	1.05407	1.03670	1.09276	0.93258	1.01908
-1	2	1	0	4	4	1.12971	0.99406	1.12301	0.82558	0.92713
-1	2	1	0	5	4	0.94197	0.97276	0.91631	1.30726	1.19786
-1	2	1	0	6	4	1.08344	0.99409	1.07704	1.18295	1.27409
-1	2	1	0	2	5	0.83715	1.04085	0.87134	0.69680	0.60715
-1	2	1	0	3	5	0.96699	1.09035	1.05436	1.09109	1.15040
-1	2	1	0	4	5	1.22851	1.00857	1.23903	1.31533	1.62973
-1	2	1	0	5	5	1.14272	0.96589	1.10374	0.66305	0.73184
-1	2	1	0	6	5	0.89894	1.04284	0.93745	0.98267	0.92120
-1	2	1	0	2	6	1.07019	1.01893	1.09045	0.86187	0.93982
-1	2	1	0	3	6	0.85518	1.02085	0.87301	0.86168	0.75225
-1	2	1	0	4	6	1.01829	1.03329	1.05219	0.82662	0.86976
-1	2	1	0	5	6	0.91603	0.98416	0.90152	1.29460	1.16711
-1	2	1	0	6	6	1.19919	0.98969	1.18682	0.84728	1.00557

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
-1	1	1	1	5	50	0.68501	0.99815	0.68374	1.43497	0.98114
-1	1	1	1	6	50	2.52163	0.99812	2.51690	0.47625	1.19869
-1	2	1	1	2	1	0.30172	1.00072	0.30193	2.44125	0.73710
-1	2	1	1	3	1	1.23837	1.00023	1.23866	0.94266	1.16764
-1	2	1	1	4	1	1.05290	0.99639	1.04910	1.01844	1.06844
-1	2	1	1	5	1	0.62535	1.00166	0.62639	0.96866	0.60675
-1	2	1	1	6	1	2.54997	0.99900	2.54742	0.51211	1.30457
-1	2	1	1	2	2	0.19861	1.00121	0.19885	3.90389	0.77629
-1	2	1	1	3	2	1.12992	0.99516	1.12445	0.91416	1.02792
-1	2	1	1	4	2	1.25849	1.00360	1.26302	0.72344	0.91372
-1	2	1	1	5	2	0.50922	0.99996	0.50920	2.24640	1.14387
-1	2	1	1	6	2	2.91158	0.99922	2.90932	0.28697	0.83489
-1	2	1	1	2	3	0.19211	0.99909	0.19193	7.32522	1.40594
-1	2	1	1	3	3	1.14842	1.00065	1.14916	0.60999	0.70097
-1	2	1	1	4	3	1.57948	0.99564	1.57259	0.64530	1.01479
-1	2	1	1	5	3	0.51323	0.99999	0.51323	2.93249	1.50503
-1	2	1	1	6	3	2.75727	0.99998	2.75721	0.34766	0.95857
-1	2	1	1	2	4	0.27693	1.01592	0.28133	4.98337	1.40200
-1	2	1	1	3	4	1.19925	1.00483	1.20505	0.67663	0.81537
-1	2	1	1	4	4	1.06657	1.00412	1.07096	1.18595	1.27011
-1	2	1	1	5	4	0.58702	0.99687	0.58518	1.24652	0.72943
-1	2	1	1	6	4	2.74552	0.99966	2.74458	0.32276	0.88584
-1	2	1	1	2	5	0.30296	0.99884	0.30261	6.25234	1.89201
-1	2	1	1	3	5	1.25967	0.99959	1.25915	0.40630	0.51160
-1	2	1	1	4	5	1.00102	0.99943	1.00045	0.64822	0.64852
-1	2	1	1	5	5	0.63784	1.00228	0.63929	2.08933	1.33569
-1	2	1	1	6	5	2.60087	0.99880	2.59774	0.49192	1.27789
-1	2	1	1	2	6	0.22167	1.00059	0.22181	4.17793	0.92669
-1	2	1	1	3	6	1.20641	1.00219	1.20905	1.08552	1.31245
-1	2	1	1	4	6	1.39727	0.99997	1.39723	0.70112	0.97962
-1	2	1	1	5	6	0.49800	0.99998	0.49799	1.85004	0.92130
-1	2	1	1	6	6	3.01050	1.00094	3.01335	0.33668	1.01454

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
-1	2	1	0	2	7	0.97763	0.93017	0.90936	1.00000	0.90936
-1	2	1	0	3	7	1.18523	0.95924	1.13692	0.79404	0.90276
-1	2	1	0	4	7	0.93865	1.00126	0.93984	1.25938	1.18362
-1	2	1	0	5	7	1.16011	1.01415	1.17653	1.00000	1.17653
-1	2	1	0	6	7	0.93325	0.97465	0.90959	1.00000	0.90959
-1	2	1	0	2	8	0.95983	1.08161	1.03817	1.44775	1.50301
-1	2	1	0	3	8	1.38468	1.03432	1.43220	0.48766	0.69842
-1	2	1	0	4	8	0.88608	1.10184	0.97632	2.33274	2.27751
-1	2	1	0	5	8	0.83646	1.02046	0.85357	1.00000	0.85357
-1	2	1	0	6	8	0.91979	1.08089	0.99420	0.61997	0.61637
-1	2	1	0	2	9	0.92160	1.03363	0.95260	1.02362	0.97509
-1	2	1	0	3	9	1.17133	1.08116	1.26640	1.11736	1.41502
-1	2	1	0	4	9	0.97319	0.98107	0.95477	1.00000	0.95477
-1	2	1	0	5	9	0.91301	1.01657	0.92814	0.86214	0.80018
-1	2	1	0	6	9	1.07787	0.98651	1.06333	1.15991	1.23337
-1	2	1	0	2	10	0.99006	0.99335	0.98347	0.57826	0.56870
-1	2	1	0	3	10	1.04320	1.03499	1.07971	1.72932	1.86717
-1	2	1	0	4	10	0.92175	1.02481	0.94461	0.51777	0.48909
-1	2	1	0	5	10	0.96484	1.10510	1.06624	1.61998	1.72729
-1	2	1	0	6	10	1.45105	0.99872	1.44919	0.76357	1.10655
-1	2	1	0	2	11	0.96379	0.98420	0.94856	0.71976	0.68274
-1	2	1	0	3	11	1.26481	0.99101	1.25344	1.38934	1.74146
-1	2	1	0	4	11	1.01434	0.99759	1.01189	0.88666	0.89720
-1	2	1	0	5	11	0.85834	1.02624	0.88086	0.83528	0.73576
-1	2	1	0	6	11	0.81078	0.99042	0.80301	1.01619	0.81601
-1	2	1	0	2	12	0.93590	1.06849	1.00000	1.00000	1.00000
-1	2	1	0	3	12	0.95598	1.04604	1.00000	1.00000	1.00000
-1	2	1	0	4	12	1.00000	1.00000	1.00000	1.00000	1.00000
-1	2	1	0	5	12	0.86041	1.01827	0.87613	1.00000	0.87613
-1	2	1	0	6	12	1.07314	1.07314	1.15164	1.00000	1.15164
-1	2	1	0	2	13	1.12172	0.82579	0.92631	0.80149	0.74242
-1	2	1	0	3	13	0.94254	0.95942	0.90429	0.83749	0.75733

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
-1	2	1	1	2	7	0.35047	1.00985	0.35392	2.42202	0.85720
-1	2	1	1	3	7	1.39601	0.99962	1.39548	0.90089	1.25717
-1	2	1	1	4	7	0.82201	1.00101	0.82284	1.09114	0.89783
-1	2	1	1	5	7	0.68004	0.99998	0.68003	1.28123	0.87127
-1	2	1	1	6	7	2.58184	1.00499	2.59473	0.39252	1.01847
-1	2	1	1	2	8	0.40390	1.00432	0.40564	2.16744	0.87920
-1	2	1	1	3	8	1.32779	0.99513	1.32132	1.04681	1.38318
-1	2	1	1	4	8	0.92661	1.01061	0.93644	0.44141	0.41336
-1	2	1	1	5	8	0.59437	1.00024	0.59451	1.84617	1.09757
-1	2	1	1	6	8	2.60281	0.99748	2.59626	0.62515	1.62307
-1	2	1	1	2	9	0.34015	1.00457	0.34170	2.25722	0.77130
-1	2	1	1	3	9	1.30403	0.99876	1.30241	0.71224	0.92763
-1	2	1	1	4	9	1.13389	0.99993	1.13382	0.94591	1.07249
-1	2	1	1	5	9	0.56176	1.00022	0.56188	1.84013	1.03393
-1	2	1	1	6	9	2.71426	0.99945	2.71278	0.39326	1.06683
-1	2	1	1	2	10	0.31736	1.00018	0.31741	4.20938	1.33610
-1	2	1	1	3	10	1.28157	1.02683	1.31595	0.24817	0.32658
-1	2	1	1	4	10	0.78394	0.99038	0.77640	2.15044	1.66959
-1	2	1	1	5	10	0.61055	0.99237	0.60589	1.65869	1.00499
-1	2	1	1	6	10	3.09769	0.99966	3.09665	0.30902	0.95692
-1	2	1	1	2	11	0.32551	1.00798	0.32810	6.49567	2.13126
-1	2	1	1	3	11	1.31361	0.99623	1.30866	0.58702	0.76820
-1	2	1	1	4	11	1.11252	0.99685	1.10902	0.77753	0.86230
-1	2	1	1	5	11	0.54332	0.99962	0.54311	1.99113	1.08141
-1	2	1	1	6	11	2.40940	1.00049	2.41059	0.60963	1.46958
-1	2	1	1	2	12	0.38135	0.99047	0.37772	1.83407	0.69276
-1	2	1	1	3	12	1.06690	1.00894	1.07644	1.82236	1.96166
-1	2	1	1	4	12	1.03602	1.00588	1.04211	0.63654	0.66334
-1	2	1	1	5	12	0.65566	0.99941	0.65528	1.99408	1.30668
-1	2	1	1	6	12	2.54108	1.00115	2.54399	0.24314	0.61855
-1	2	1	1	2	13	0.38037	1.01295	0.38530	7.79361	3.00285
-1	2	1	1	3	13	1.23345	1.00356	1.23784	0.98770	1.22261

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
-1	2	1	0	4	13	1.07225	1.06905	1.14629	1.48979	1.70773
-1	2	1	0	5	13	1.10450	1.03037	1.13805	0.71633	0.81522
-1	2	1	0	6	13	0.98632	1.11910	1.10378	1.39600	1.54088
-1	2	1	0	2	14	0.94470	0.96941	0.91580	1.58748	1.45382
-1	2	1	0	3	14	0.99924	1.00076	1.00000	1.00000	1.00000
-1	2	1	0	4	14	1.04712	1.01325	1.06099	0.65023	0.68989
-1	2	1	0	5	14	1.03894	0.97143	1.00926	0.69084	0.69723
-1	2	1	0	6	14	1.07366	0.99915	1.07275	1.09935	1.17933
-1	2	1	0	2	15	0.96626	0.96278	0.93030	1.28050	1.19125
-1	2	1	0	3	15	1.02291	0.94312	0.96472	1.00000	0.96472
-1	2	1	0	4	15	1.03576	1.00000	1.03576	0.79514	0.82357
-1	2	1	0	5	15	1.23117	0.93307	1.14877	0.68332	0.78498
-1	2	1	0	6	15	0.81177	0.89863	0.72948	1.60055	1.16757
-1	2	1	0	2	16	0.94237	1.00233	0.94456	0.88278	0.83384
-1	2	1	0	3	16	1.07474	1.00293	1.07790	0.94091	1.01421
-1	2	1	0	4	16	1.10969	1.01825	1.12994	0.99429	1.12349
-1	2	1	0	5	16	1.20141	0.93663	1.12528	0.99125	1.11543
-1	2	1	0	6	16	0.90389	1.00331	0.90688	1.20546	1.09320
-1	2	1	0	2	17	0.94077	1.01487	0.95476	1.06810	1.01978
-1	2	1	0	3	17	1.14018	0.99727	1.13707	0.75812	0.86203
-1	2	1	0	4	17	0.99095	1.00168	0.99261	1.68905	1.67658
-1	2	1	0	5	17	1.02457	0.94655	0.96981	0.73532	0.71312
-1	2	1	0	6	17	1.12701	1.04683	1.17980	0.95990	1.13248
-1	2	1	0	2	18	0.97688	0.95149	0.92950	1.00000	0.92950
-1	2	1	0	3	18	1.27398	0.99666	1.26973	1.00000	1.26973
-1	2	1	0	4	18	0.99602	0.92435	0.92067	1.00000	0.92067
-1	2	1	0	5	18	0.95013	1.06255	1.00955	1.00000	1.00955
-1	2	1	0	6	18	0.99578	0.98579	0.98163	1.00000	0.98163
-1	2	1	0	2	19	0.91073	1.05196	0.95805	1.01682	0.97417
-1	2	1	0	3	19	1.16550	1.00537	1.17176	0.86858	1.01777
-1	2	1	0	4	19	0.83038	1.00074	0.83099	1.09835	0.91272
-1	2	1	0	5	19	1.10203	1.06510	1.17378	1.31174	1.53970

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
-1	2	1	1	4	13	0.80360	1.00781	0.80988	0.57857	0.46857
-1	2	1	1	5	13	0.66971	1.00501	0.67307	2.38173	1.60306
-1	2	1	1	6	13	2.54631	1.00051	2.54759	0.73911	1.88295
-1	2	1	1	2	14	0.26332	1.00506	0.26465	3.86038	1.02166
-1	2	1	1	3	14	1.23510	1.00861	1.24573	0.44136	0.54981
-1	2	1	1	4	14	0.97310	0.99426	0.96752	1.39671	1.35134
-1	2	1	1	5	14	0.58770	1.00021	0.58782	2.15750	1.26822
-1	2	1	1	6	14	2.72917	1.00047	2.73045	0.19041	0.51991
-1	2	1	1	2	15	0.27819	0.99938	0.27802	3.57760	0.99463
-1	2	1	1	3	15	1.39071	1.00476	1.39733	0.58769	0.82120
-1	2	1	1	4	15	0.88731	0.99681	0.88448	1.36449	1.20686
-1	2	1	1	5	15	0.62431	0.99974	0.62415	1.67328	1.04437
-1	2	1	1	6	15	2.37799	1.00573	2.39163	0.34116	0.81594
-1	2	1	1	2	16	0.28689	1.00019	0.28694	3.84438	1.10313
-1	2	1	1	3	16	1.24879	1.00006	1.24887	0.77556	0.96858
-1	2	1	1	4	16	1.14157	1.00111	1.14283	0.93115	1.06415
-1	2	1	1	5	16	0.58117	0.99740	0.57966	1.34080	0.77720
-1	2	1	1	6	16	2.68180	1.00001	2.68183	0.31235	0.83767
-1	2	1	1	2	17	0.33564	0.99979	0.33557	2.83909	0.95271
-1	2	1	1	3	17	1.29799	1.00008	1.29810	0.83699	1.08649
-1	2	1	1	4	17	0.85206	1.00251	0.85420	0.77263	0.65998
-1	2	1	1	5	17	0.62822	1.00055	0.62856	1.95816	1.23083
-1	2	1	1	6	17	2.86434	1.00414	2.87619	0.38710	1.11339
-1	2	1	1	2	18	0.31642	1.00005	0.31643	4.21119	1.33255
-1	2	1	1	3	18	1.36743	1.00058	1.36822	0.58438	0.79956
-1	2	1	1	4	18	0.92024	0.99965	0.91992	1.26805	1.16650
-1	2	1	1	5	18	0.63466	0.99925	0.63419	1.08136	0.68578
-1	2	1	1	6	18	2.53040	1.00000	2.53041	0.42325	1.07099
-1	2	1	1	2	19	0.30269	0.99927	0.30247	3.14878	0.95240
-1	2	1	1	3	19	1.29487	0.99977	1.29457	0.64968	0.84105
-1	2	1	1	4	19	0.79902	0.99991	0.79895	1.37023	1.09475
-1	2	1	1	5	19	0.66775	1.00994	0.67438	0.57303	0.38644

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
-1	2	1	0	6	19	1.05706	1.05706	1.11738	1.00000	1.11738
-1	2	1	0	2	20	1.00648	1.12053	1.12779	1.61452	1.82083
-1	2	1	0	3	20	0.85105	1.11986	0.95306	0.76659	0.73060
-1	2	1	0	4	20	0.91167	1.02993	0.93895	0.71032	0.66696
-1	2	1	0	5	20	1.25523	0.95736	1.20171	0.76907	0.92419
-1	2	1	0	6	20	0.90676	0.86454	0.78393	1.55291	1.21737
-1	2	1	0	2	21	0.91407	0.97198	0.88846	0.71628	0.63639
-1	2	1	0	3	21	0.95207	1.03194	0.98248	1.24006	1.21833
-1	2	1	0	4	21	1.13459	1.06805	1.21179	1.16948	1.41717
-1	2	1	0	5	21	0.96074	1.10254	1.05926	1.06254	1.12550
-1	2	1	0	6	21	1.09126	1.00766	1.09962	0.75662	0.83199
-1	2	1	0	2	22	0.92666	0.98909	0.91654	1.00000	0.91654
-1	2	1	0	3	22	1.09850	1.01002	1.10950	0.72706	0.80667
-1	2	1	0	4	22	0.85474	1.12298	0.95985	1.37541	1.32019
-1	2	1	0	5	22	1.01053	1.02077	1.03152	0.57824	0.59646
-1	2	1	0	6	22	0.72904	0.99659	0.72656	1.25672	0.91308
-1	2	1	0	2	23	1.02088	0.95366	0.97358	0.67964	0.66168
-1	2	1	0	3	23	1.07883	1.01890	1.09922	1.04220	1.14560
-1	2	1	0	4	23	1.05291	1.00739	1.06070	1.41180	1.49749
-1	2	1	0	5	23	1.01640	1.05045	1.06768	1.00000	1.06768
-1	2	1	0	6	23	1.40416	1.00087	1.40537	0.67817	0.95308
-1	2	1	0	2	24	1.02913	1.01006	1.03948	1.00000	1.03948
-1	2	1	0	3	24	0.97737	1.02315	1.00000	1.00000	1.00000
-1	2	1	0	4	24	1.00000	1.00000	1.00000	1.00000	1.00000
-1	2	1	0	5	24	0.98372	0.98372	0.96771	1.00000	0.96771
-1	2	1	0	6	24	1.35495	1.04615	1.41748	1.00000	1.41748
-1	2	1	0	2	25	0.98472	1.02279	1.00716	1.66807	1.68001
-1	2	1	0	3	25	1.21230	0.96499	1.16985	0.82828	0.96896
-1	2	1	0	4	25	1.09440	1.00404	1.09883	1.20732	1.32664
-1	2	1	0	5	25	0.96092	0.98973	0.95105	1.00000	0.95105
-1	2	1	0	6	25	1.08605	0.99506	1.08069	0.64653	0.69870
-1	2	1	0	2	26	0.98252	1.01617	0.99841	1.45466	1.45235

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
-1	2	1	1	6	19	2.95340	0.99029	2.92473	0.15958	0.46672
-1	2	1	1	2	20	0.45000	1.02665	0.46199	1.19536	0.55225
-1	2	1	1	3	20	1.21464	1.00091	1.21575	1.25849	1.53000
-1	2	1	1	4	20	0.88380	1.00389	0.88724	1.02525	0.90965
-1	2	1	1	5	20	0.72046	1.00010	0.72053	1.33824	0.96425
-1	2	1	1	6	20	2.32938	1.00734	2.34647	0.38830	0.91114
-1	2	1	1	2	21	0.28981	1.00023	0.28987	4.92619	1.42798
-1	2	1	1	3	21	1.20980	0.99975	1.20951	0.81961	0.99133
-1	2	1	1	4	21	1.08455	1.00413	1.08902	0.56157	0.61156
-1	2	1	1	5	21	0.60085	1.00033	0.60105	1.88792	1.13473
-1	2	1	1	6	21	2.89490	1.00297	2.90350	0.35190	1.02173
-1	2	1	1	2	22	0.26270	0.98273	0.25816	4.85750	1.25402
-1	2	1	1	3	22	1.26162	0.96002	1.21119	0.44064	0.53369
-1	2	1	1	4	22	0.88157	1.01421	0.89410	1.02568	0.91706
-1	2	1	1	5	22	0.59989	1.00748	0.60438	3.19531	1.93119
-1	2	1	1	6	22	2.11729	0.99660	2.11009	0.43030	0.90797
-1	2	1	1	2	23	0.27003	0.99151	0.26774	6.01966	1.61170
-1	2	1	1	3	23	1.25325	0.99278	1.24420	0.54688	0.68043
-1	2	1	1	4	23	0.95975	0.99973	0.95949	0.94439	0.90613
-1	2	1	1	5	23	0.57025	1.00198	0.57138	1.47486	0.84270
-1	2	1	1	6	23	3.06236	0.99982	3.06181	0.36037	1.10337
-1	2	1	1	2	24	0.12525	0.99985	0.12523	7.68613	0.96252
-1	2	1	1	3	24	0.90768	0.99982	0.90752	1.31112	1.18986
-1	2	1	1	4	24	2.61828	1.00331	2.62694	0.29631	0.77839
-1	2	1	1	5	24	0.38913	0.99806	0.38837	3.48327	1.35280
-1	2	1	1	6	24	4.05302	0.99982	4.05230	0.23983	0.97186
-1	2	1	1	2	25	0.37395	0.99362	0.37157	1.32928	0.49392
-1	2	1	1	3	25	1.31309	0.99973	1.31274	1.14285	1.50026
-1	2	1	1	4	25	1.22228	1.00314	1.22612	0.73632	0.90282
-1	2	1	1	5	25	0.54237	0.99938	0.54203	1.84622	1.00070
-1	2	1	1	6	25	2.72254	1.00093	2.72508	0.62608	1.70611
-1	2	1	1	2	26	0.19565	0.99816	0.19529	4.68735	0.91539

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
-1	2	1	0	3	26	0.99858	1.02027	1.01881	0.63227	0.64417
-1	2	1	0	4	26	1.02636	1.00092	1.02731	0.78737	0.80887
-1	2	1	0	5	26	0.97560	0.96192	0.93844	1.23310	1.15719
-1	2	1	0	6	26	1.28099	1.00052	1.28165	0.70664	0.90566
-1	2	1	0	2	27	0.97780	0.99403	0.97196	1.67571	1.62873
-1	2	1	0	3	27	1.00902	1.03383	1.04315	0.74602	0.77822
-1	2	1	0	4	27	1.02647	1.04568	1.07337	1.34044	1.43878
-1	2	1	0	5	27	1.00109	0.96742	0.96847	0.70740	0.68509
-1	2	1	0	6	27	1.15819	0.99684	1.15454	0.87658	1.01204
-1	2	1	0	2	28	0.78798	0.92080	0.72558	1.80379	1.30879
-1	2	1	0	3	28	1.14458	1.00328	1.14834	1.00000	1.14834
-1	2	1	0	4	28	0.97406	1.02273	0.99620	0.59414	0.59188
-1	2	1	0	5	28	0.87513	1.00005	0.87517	1.68311	1.47301
-1	2	1	0	6	28	1.42224	1.01102	1.43791	0.68769	0.98884
-1	2	1	0	2	29	0.94316	1.00057	0.94370	0.87247	0.82335
-1	2	1	0	3	29	1.10758	1.05821	1.17205	2.07099	2.42730
-1	2	1	0	4	29	0.92162	1.01356	0.93411	1.00000	0.93411
-1	2	1	0	5	29	1.00000	1.00000	1.00000	1.00000	1.00000
-1	2	1	0	6	29	0.92746	1.10339	1.02336	0.42077	0.43060
-1	2	1	0	2	30	0.95488	0.98184	0.93754	1.22791	1.15121
-1	2	1	0	3	30	0.95938	1.06063	1.01755	1.04641	1.06477
-1	2	1	0	4	30	1.05931	1.01637	1.07665	0.92689	0.99794
-1	2	1	0	5	30	0.92614	1.00290	0.92883	0.97904	0.90936
-1	2	1	0	6	30	0.97664	1.06742	1.04249	1.49687	1.56047
-1	2	1	0	2	31	1.02005	1.00011	1.02016	1.00000	1.02016
-1	2	1	0	3	31	1.10829	0.97271	1.07804	1.00000	1.07804
-1	2	1	0	4	31	1.02233	0.95038	0.97160	1.00000	0.97160
-1	2	1	0	5	31	1.00190	0.96420	0.96603	0.87471	0.84500
-1	2	1	0	6	31	0.91297	1.04022	0.94969	1.14323	1.08572
-1	2	1	0	2	32	1.02786	1.01115	1.03932	1.00000	1.03932
-1	2	1	0	3	32	1.00000	1.00000	1.00000	1.00000	1.00000
-1	2	1	0	4	32	1.00000	1.00000	1.00000	1.00000	1.00000

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
-1	2	1	1	3	26	1.12889	1.00008	1.12898	1.07707	1.21598
-1	2	1	1	4	26	1.38356	1.00007	1.38366	0.85310	1.18040
-1	2	1	1	5	26	0.57949	0.99533	0.57678	1.44453	0.83318
-1	2	1	1	6	26	2.77147	1.00099	2.77422	0.40781	1.13135
-1	2	1	1	2	27	0.35181	1.01432	0.35685	1.72374	0.61512
-1	2	1	1	3	27	1.31186	0.99680	1.30766	1.07790	1.40953
-1	2	1	1	4	27	0.90583	1.00999	0.91488	0.69656	0.63727
-1	2	1	1	5	27	0.62249	0.99862	0.62163	2.43589	1.51422
-1	2	1	1	6	27	2.55940	0.99960	2.55838	0.45443	1.16261
-1	2	1	1	2	28	0.31541	1.00012	0.31545	3.78401	1.19365
-1	2	1	1	3	28	1.18241	1.00121	1.18384	0.68851	0.81508
-1	2	1	1	4	28	1.44174	0.99988	1.44156	0.71023	1.02384
-1	2	1	1	5	28	0.49346	1.00000	0.49346	1.79898	0.88772
-1	2	1	1	6	28	3.13695	1.00013	3.13735	0.29809	0.93520
-1	2	1	1	2	29	0.28699	0.99906	0.28672	3.56612	1.02247
-1	2	1	1	3	29	1.20114	1.01380	1.21772	0.33739	0.41084
-1	2	1	1	4	29	1.23123	1.01840	1.25389	1.75846	2.20492
-1	2	1	1	5	29	0.57212	0.98682	0.56457	0.73477	0.41483
-1	2	1	1	6	29	2.70528	1.00226	2.71140	1.05008	2.84718
-1	2	1	1	2	30	0.26237	1.00079	0.26258	3.25783	0.85544
-1	2	1	1	3	30	1.21679	1.00033	1.21718	0.67954	0.82713
-1	2	1	1	4	30	1.29760	1.00486	1.30391	0.85114	1.10981
-1	2	1	1	5	30	0.50521	0.99995	0.50519	2.15896	1.09068
-1	2	1	1	6	30	3.01028	0.99749	3.00274	0.23999	0.72061
-1	2	1	1	2	31	0.27139	0.99983	0.27134	3.07876	0.83539
-1	2	1	1	3	31	1.17356	0.99808	1.17131	0.69870	0.81839
-1	2	1	1	4	31	1.01908	1.01132	1.03062	1.00487	1.03564
-1	2	1	1	5	31	0.62953	0.99880	0.62878	1.49833	0.94211
-1	2	1	1	6	31	2.61648	1.00114	2.61945	0.28019	0.73395
-1	2	1	1	2	32	0.14503	0.99967	0.14498	6.27283	0.90943
-1	2	1	1	3	32	0.99279	1.00008	0.99288	1.04548	1.03803
-1	2	1	1	4	32	2.10259	1.00045	2.10354	0.43317	0.91118

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
-1	2	1	0	5	32	0.99021	1.00988	1.00000	1.00000	1.00000
-1	2	1	0	6	32	1.00000	1.00000	1.00000	1.00000	1.00000
-1	2	1	0	2	33	0.89006	1.00671	0.89603	0.95208	0.85309
-1	2	1	0	3	33	1.06806	1.06806	1.14075	1.82453	2.08133
-1	2	1	0	4	33	1.14789	1.04830	1.20334	1.00000	1.20334
-1	2	1	0	5	33	0.88035	0.94578	0.83262	1.00000	0.83262
-1	2	1	0	6	33	1.06626	0.96807	1.03221	0.46952	0.48464
-1	2	1	0	2	34	0.86663	0.97105	0.84154	1.48505	1.24973
-1	2	1	0	3	34	1.10930	1.04850	1.16310	1.38362	1.60929
-1	2	1	0	4	34	1.07472	0.99575	1.07015	0.55619	0.59520
-1	2	1	0	5	34	1.06613	0.93138	0.99297	1.79795	1.78532
-1	2	1	0	6	34	0.83900	0.98537	0.82672	1.00000	0.82672
-1	2	1	0	2	35	0.90475	0.95544	0.86443	1.03339	0.89329
-1	2	1	0	3	35	1.02696	0.98901	1.01568	1.51824	1.54205
-1	2	1	0	4	35	1.08431	1.02984	1.11666	0.78454	0.87607
-1	2	1	0	5	35	0.92418	0.99301	0.91772	1.06047	0.97322
-1	2	1	0	6	35	1.09802	1.00820	1.10702	0.87804	0.97201
-1	2	1	0	2	36	0.81142	1.02714	0.83344	1.00000	0.83344
-1	2	1	0	3	36	0.87246	0.98649	0.86067	1.00000	0.86067
-1	2	1	0	4	36	1.29924	1.06132	1.37891	1.00000	1.37891
-1	2	1	0	5	36	0.78058	1.12644	0.87928	1.00000	0.87928
-1	2	1	0	6	36	1.03996	1.04428	1.08601	1.00000	1.08601
-1	2	1	0	2	37	1.08681	1.00336	1.09046	1.00000	1.09046
-1	2	1	0	3	37	1.02492	1.00740	1.03251	0.83918	0.86646
-1	2	1	0	4	37	1.02318	0.99887	1.02202	1.19164	1.21788
-1	2	1	0	5	37	1.23829	1.01667	1.25893	0.81170	1.02187
-1	2	1	0	6	37	0.93448	1.02036	0.95351	1.03810	0.98984
-1	2	1	0	2	38	0.94209	1.04704	0.98640	1.17872	1.16270
-1	2	1	0	3	38	1.17597	1.01376	1.19215	0.83274	0.99275
-1	2	1	0	4	38	1.00108	1.03308	1.03420	1.57546	1.62934
-1	2	1	0	5	38	1.01443	1.03809	1.05308	0.88561	0.93262
-1	2	1	0	6	38	1.16800	1.02371	1.19569	0.85274	1.01961

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
-1	2	1	1	5	32	0.43745	1.00000	0.43745	2.33218	1.02021
-1	2	1	1	6	32	3.44375	1.00004	3.44390	0.27353	0.94202
-1	2	1	1	2	33	0.38790	1.01124	0.39226	2.81727	1.10509
-1	2	1	1	3	33	1.31666	0.99793	1.31394	0.24855	0.32658
-1	2	1	1	4	33	1.01536	1.00288	1.01828	1.05869	1.07805
-1	2	1	1	5	33	0.60766	0.99911	0.60712	1.47690	0.89665
-1	2	1	1	6	33	2.23707	1.00884	2.25684	1.24778	2.81605
-1	2	1	1	2	34	0.29274	0.99689	0.29183	2.64468	0.77180
-1	2	1	1	3	34	1.25892	1.00319	1.26293	0.52245	0.65982
-1	2	1	1	4	34	0.99355	0.99387	0.98745	1.55107	1.53160
-1	2	1	1	5	34	0.60689	0.99972	0.60672	0.89959	0.54581
-1	2	1	1	6	34	2.81612	0.99652	2.80631	0.58914	1.65332
-1	2	1	1	2	35	0.25952	0.99904	0.25927	4.05539	1.05146
-1	2	1	1	3	35	1.22412	0.99931	1.22328	0.85569	1.04675
-1	2	1	1	4	35	1.29026	0.99993	1.29017	0.68973	0.88987
-1	2	1	1	5	35	0.53871	0.99996	0.53869	1.82411	0.98263
-1	2	1	1	6	35	2.86582	0.99918	2.86347	0.43743	1.25257
-1	2	1	1	2	36	0.33830	1.00224	0.33906	3.51320	1.19120
-1	2	1	1	3	36	1.29852	1.00086	1.29963	0.93658	1.21721
-1	2	1	1	4	36	0.93811	0.99641	0.93474	0.75412	0.70491
-1	2	1	1	5	36	0.61950	0.99854	0.61859	2.92046	1.80658
-1	2	1	1	6	36	2.27457	0.99792	2.26983	0.24835	0.56372
-1	2	1	1	2	37	0.19100	0.99966	0.19093	5.04797	0.96382
-1	2	1	1	3	37	1.16259	1.00080	1.16352	0.84473	0.98286
-1	2	1	1	4	37	1.31334	0.99869	1.31162	0.87437	1.14684
-1	2	1	1	5	37	0.52298	1.00002	0.52299	1.76070	0.92083
-1	2	1	1	6	37	2.88939	0.99982	2.88888	0.36162	1.04468
-1	2	1	1	2	38	0.39195	1.00079	0.39226	1.57560	0.61805
-1	2	1	1	3	38	1.30895	0.99848	1.30696	1.02724	1.34256
-1	2	1	1	4	38	0.89142	1.01432	0.90418	0.64965	0.58740
-1	2	1	1	5	38	0.69576	1.00117	0.69657	1.66429	1.15930
-1	2	1	1	6	38	2.46235	0.99973	2.46168	0.44934	1.10612

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
-1	2	1	0	2	39	1.10081	0.99046	1.09031	1.05583	1.15118
-1	2	1	0	3	39	1.16147	0.85240	0.99004	1.00000	0.99004
-1	2	1	0	4	39	0.93704	1.01929	0.95511	0.69035	0.65936
-1	2	1	0	5	39	1.15686	1.00926	1.16757	1.12898	1.31817
-1	2	1	0	6	39	0.84846	0.92633	0.78595	1.09295	0.85901
-1	2	1	0	2	40	1.07294	0.93270	1.00072	1.21384	1.21472
-1	2	1	0	3	40	0.96358	0.97505	0.93954	1.35336	1.27153
-1	2	1	0	4	40	1.00902	0.93221	0.94062	0.74943	0.70492
-1	2	1	0	5	40	1.08473	0.98148	1.06464	0.66015	0.70282
-1	2	1	0	6	40	0.89928	0.93152	0.83769	2.02127	1.69321
-1	2	1	0	2	41	1.05843	1.00152	1.06004	0.82615	0.87575
-1	2	1	0	3	41	1.01254	0.98474	0.99708	0.73722	0.73507
-1	2	1	0	4	41	1.06526	1.00341	1.06889	1.03642	1.10782
-1	2	1	0	5	41	0.85076	1.07474	0.91435	1.93753	1.77158
-1	2	1	0	6	41	1.22173	0.96612	1.18034	0.44000	0.51935
-1	2	1	0	2	42	1.04997	0.98749	1.03684	1.68238	1.74436
-1	2	1	0	3	42	1.36966	1.36561	1.87042	1.19034	2.22644
-1	2	1	0	4	42	0.65473	0.69301	0.45373	0.52663	0.23895
-1	2	1	0	5	42	0.94562	1.03485	0.97858	1.33599	1.30737
-1	2	1	0	6	42	1.08764	0.99861	1.08613	1.03086	1.11965
-1	2	1	0	2	43	0.96591	0.92123	0.88983	1.00000	0.88983
-1	2	1	0	3	43	0.88003	1.15147	1.01333	1.00000	1.01333
-1	2	1	0	4	43	0.96592	0.98255	0.94907	0.44887	0.42601
-1	2	1	0	5	43	0.84339	0.98703	0.83245	2.22782	1.85455
-1	2	1	0	6	43	0.84310	1.04048	0.87722	0.59536	0.52227
-1	2	1	0	2	44	0.95237	0.98708	0.94007	1.36920	1.28715
-1	2	1	0	3	44	1.00377	0.99909	1.00287	0.70802	0.71005
-1	2	1	0	4	44	1.03400	0.98602	1.01955	1.09807	1.11954
-1	2	1	0	5	44	1.14238	0.99776	1.13982	0.67465	0.76898
-1	2	1	0	6	44	1.03356	0.96727	0.99973	1.90654	1.90603
-1	2	1	0	2	45	0.88600	0.99440	0.88104	1.05148	0.92639
-1	2	1	0	3	45	2.18561	1.01088	2.20939	0.49012	1.08287

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
-1	2	1	1	2	39	0.39943	1.00003	0.39944	2.23113	0.89121
-1	2	1	1	3	39	1.38302	0.99232	1.37240	0.32049	0.43985
-1	2	1	1	4	39	0.79559	1.01267	0.80567	2.79558	2.25230
-1	2	1	1	5	39	0.65214	1.00016	0.65224	1.31282	0.85628
-1	2	1	1	6	39	2.07360	0.99385	2.06084	0.80228	1.65338
-1	2	1	1	2	40	0.31092	1.00050	0.31107	2.89484	0.90051
-1	2	1	1	3	40	1.26135	0.99756	1.25827	0.54144	0.68128
-1	2	1	1	4	40	1.05512	1.00092	1.05609	1.29938	1.37226
-1	2	1	1	5	40	0.61916	0.99830	0.61811	1.37268	0.84847
-1	2	1	1	6	40	2.53842	0.99795	2.53321	0.32700	0.82837
-1	2	1	1	2	41	0.18165	1.00032	0.18171	5.84051	1.06126
-1	2	1	1	3	41	1.01843	0.99880	1.01721	1.10084	1.11978
-1	2	1	1	4	41	1.27068	0.99773	1.26780	0.76232	0.96647
-1	2	1	1	5	41	0.52100	0.99999	0.52100	1.51818	0.79096
-1	2	1	1	6	41	2.95845	1.00384	2.96981	0.36952	1.09740
-1	2	1	1	2	42	0.54951	1.04827	0.57603	0.99107	0.57089
-1	2	1	1	3	42	1.00667	0.97698	0.98349	1.00901	0.99235
-1	2	1	1	4	42	1.39240	1.01560	1.41412	1.11960	1.58325
-1	2	1	1	5	42	0.70023	0.99932	0.69975	1.82900	1.27984
-1	2	1	1	6	42	2.02210	0.99985	2.02179	0.48834	0.98732
-1	2	1	1	2	43	0.41136	0.99853	0.41076	3.72645	1.53067
-1	2	1	1	3	43	1.07625	0.99684	1.07285	1.08967	1.16906
-1	2	1	1	4	43	1.00829	1.00941	1.01778	1.00845	1.02638
-1	2	1	1	5	43	0.66317	1.00247	0.66481	0.94933	0.63112
-1	2	1	1	6	43	2.35149	0.99979	2.35099	0.53189	1.25046
-1	2	1	1	2	44	0.19860	0.99001	0.19661	2.47062	0.48575
-1	2	1	1	3	44	1.18070	1.00084	1.18169	1.20051	1.41863
-1	2	1	1	4	44	1.05352	1.00706	1.06095	0.81038	0.85977
-1	2	1	1	5	44	0.60237	0.99987	0.60229	2.11036	1.27105
-1	2	1	1	6	44	2.76451	0.99371	2.74713	0.15174	0.41685
-1	2	1	1	2	45	0.57501	1.00057	0.57533	1.92471	1.10735
-1	2	1	1	3	45	1.23927	1.00013	1.23944	0.76947	0.95371

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
-1	2	1	0	4	45	0.80759	0.98669	0.79684	1.10700	0.88209
-1	2	1	0	5	45	1.07252	1.01609	1.08978	0.99646	1.08592
-1	2	1	0	6	45	0.81957	1.01125	0.82880	1.08082	0.89578
-1	2	1	0	2	46	0.94020	0.99972	0.93994	1.21286	1.14001
-1	2	1	0	3	46	0.98316	1.01680	0.99968	0.76750	0.76726
-1	2	1	0	4	46	1.08500	0.98571	1.06950	1.14753	1.22728
-1	2	1	0	5	46	1.27473	1.03071	1.31388	0.82481	1.08370
-1	2	1	0	6	46	0.84903	0.90281	0.76651	1.37659	1.05517
-1	2	1	0	2	47	1.01693	1.01251	1.02965	1.08520	1.11738
-1	2	1	0	3	47	0.98728	0.97083	0.95848	1.00000	0.95848
-1	2	1	0	4	47	1.01505	0.99442	1.00939	1.00000	1.00939
-1	2	1	0	5	47	0.98222	0.99361	0.97595	1.00000	0.97595
-1	2	1	0	6	47	1.21511	0.97916	1.18979	1.00000	1.18979
-1	2	1	0	2	48	0.95038	0.95793	0.91041	1.00000	0.91041
-1	2	1	0	3	48	1.00000	1.00000	1.00000	1.00000	1.00000
-1	2	1	0	4	48	1.10431	1.10056	1.21535	0.87821	1.06733
-1	2	1	0	5	48	0.94670	1.01600	0.96184	1.13868	1.09524
-1	2	1	0	6	48	1.01717	1.00000	1.01717	1.00000	1.01717
-1	2	1	0	2	49	1.16142	0.95130	1.10485	0.68348	0.75515
-1	2	1	0	3	49	1.03514	0.94766	0.98096	0.99970	0.98066
-1	2	1	0	4	49	1.03598	1.01338	1.04984	1.46353	1.53648
-1	2	1	0	5	49	1.01302	0.98715	1.00000	1.00000	1.00000
-1	2	1	0	6	49	1.02993	1.11204	1.14533	0.65360	0.74859
-1	2	1	0	2	50	0.85294	0.96162	0.82021	1.04134	0.85411
-1	2	1	0	3	50	0.98622	1.00439	0.99055	1.09607	1.08570
-1	2	1	0	4	50	1.21387	0.96101	1.16654	1.06386	1.24104
-1	2	1	0	5	50	0.88121	1.17860	1.03859	1.00000	1.03859
-1	2	1	0	6	50	1.20852	0.93096	1.12508	0.72856	0.81969
-1	1	2	0	2	1	1.06043	0.98842	1.04815	1.07659	1.12843
-1	1	2	0	3	1	0.95788	0.99747	0.95546	0.64518	0.61644
-1	1	2	0	4	1	1.00337	1.00592	1.00931	1.37588	1.38868
-1	1	2	0	5	1	1.02102	1.00311	1.02420	1.25316	1.28348

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
-1	2	1	1	4	45	0.88495	1.00044	0.88533	1.39814	1.23782
-1	2	1	1	5	45	0.69005	1.00004	0.69008	1.58060	1.09075
-1	2	1	1	6	45	2.19203	1.00053	2.19320	0.35728	0.78358
-1	2	1	1	2	46	0.31995	1.00002	0.31995	2.66012	0.85111
-1	2	1	1	3	46	1.28216	0.99840	1.28011	1.03827	1.32910
-1	2	1	1	4	46	0.98869	1.00029	0.98898	0.89015	0.88034
-1	2	1	1	5	46	0.57718	0.99959	0.57695	1.92891	1.11288
-1	2	1	1	6	46	2.75722	1.00434	2.76919	0.32475	0.89929
-1	2	1	1	2	47	0.26481	1.00094	0.26506	3.17297	0.84104
-1	2	1	1	3	47	1.20909	1.00002	1.20911	0.97223	1.17553
-1	2	1	1	4	47	1.17361	1.00008	1.17370	0.81388	0.95525
-1	2	1	1	5	47	0.52906	0.99983	0.52897	2.03507	1.07649
-1	2	1	1	6	47	3.05744	1.00093	3.06028	0.30598	0.93639
-1	2	1	1	2	48	0.25048	0.99888	0.25020	4.16321	1.04163
-1	2	1	1	3	48	1.28709	0.99718	1.28346	0.74904	0.96136
-1	2	1	1	4	48	1.09893	1.00395	1.10327	0.91565	1.01021
-1	2	1	1	5	48	0.57576	0.99881	0.57508	1.91683	1.10233
-1	2	1	1	6	48	2.50139	1.00092	2.50370	0.42536	1.06498
-1	2	1	1	2	49	0.30304	0.99991	0.30301	3.38126	1.02456
-1	2	1	1	3	49	1.24851	0.99812	1.24616	0.65824	0.82028
-1	2	1	1	4	49	1.09642	1.00006	1.09649	0.83194	0.91220
-1	2	1	1	5	49	0.56227	0.99921	0.56182	1.40814	0.79113
-1	2	1	1	6	49	2.94605	1.00042	2.94729	0.42444	1.25096
-1	2	1	1	2	50	0.28165	1.00189	0.28218	2.90652	0.82017
-1	2	1	1	3	50	1.16852	0.99898	1.16732	0.75254	0.87846
-1	2	1	1	4	50	0.98075	1.00772	0.98832	0.81137	0.80189
-1	2	1	1	5	50	0.68501	0.99815	0.68374	1.43497	0.98114
-1	2	1	1	6	50	2.52163	0.99812	2.51690	0.47625	1.19869
-1	1	2	1	2	1	1.15558	0.99330	1.14784	0.90153	1.03481
-1	1	2	1	3	1	1.47617	1.00003	1.47621	0.44993	0.66419
-1	1	2	1	4	1	0.49741	0.99150	0.49318	3.45064	1.70179
-1	1	2	1	5	1	1.31400	1.00860	1.32530	0.74791	0.99120

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
-1	1	2	0	6	1	0.84456	1.02739	0.86769	0.72847	0.63209
-1	1	2	0	2	2	0.96974	1.01833	0.98751	0.83169	0.82131
-1	1	2	0	3	2	0.95240	1.03710	0.98773	0.67436	0.66609
-1	1	2	0	4	2	1.07497	0.99620	1.07089	1.86580	1.99807
-1	1	2	0	5	2	1.02710	0.98034	1.00691	0.77697	0.78234
-1	1	2	0	6	2	1.02508	0.98878	1.01358	0.98194	0.99528
-1	1	2	0	2	3	0.91844	1.00000	0.91844	0.98341	0.90320
-1	1	2	0	3	3	1.05735	1.00000	1.05735	1.01687	1.07519
-1	1	2	0	4	3	0.96479	0.97876	0.94430	1.00000	0.94430
-1	1	2	0	5	3	1.09512	1.00000	1.09512	1.00000	1.09512
-1	1	2	0	6	3	1.05402	0.99797	1.05188	1.00000	1.05188
-1	1	2	0	2	4	1.00022	1.04513	1.04537	0.70425	0.73620
-1	1	2	0	3	4	0.94796	1.00269	0.95051	0.99174	0.94265
-1	1	2	0	4	4	1.11012	1.07809	1.19681	1.04975	1.25635
-1	1	2	0	5	4	0.89096	1.05584	0.94071	1.07009	1.00665
-1	1	2	0	6	4	1.06811	1.00096	1.06914	1.19243	1.27487
-1	1	2	0	2	5	1.06579	0.96904	1.03279	0.48501	0.50091
-1	1	2	0	3	5	0.92142	1.00381	0.92493	1.59273	1.47316
-1	1	2	0	4	5	1.14719	0.97675	1.12051	1.35397	1.51714
-1	1	2	0	5	5	1.34689	0.92301	1.24319	0.52227	0.64928
-1	1	2	0	6	5	0.85218	0.99791	0.85039	1.18593	1.00851
-1	1	2	0	2	6	1.01629	1.00013	1.01643	0.99821	1.01461
-1	1	2	0	3	6	0.89654	1.00012	0.89665	0.98026	0.87894
-1	1	2	0	4	6	1.01252	1.00947	1.02211	0.91873	0.93904
-1	1	2	0	5	6	1.11846	1.00084	1.11940	0.94689	1.05995
-1	1	2	0	6	6	0.99420	0.98481	0.97910	1.04915	1.02722
-1	1	2	0	2	7	1.13099	1.00684	1.13873	1.00710	1.14682
-1	1	2	0	3	7	0.98367	0.97892	0.96293	0.75054	0.72272
-1	1	2	0	4	7	1.04819	0.98781	1.03542	1.04599	1.08303
-1	1	2	0	5	7	0.98145	0.97014	0.95214	1.27380	1.21284
-1	1	2	0	6	7	1.11674	0.95447	1.06589	0.68131	0.72620
-1	1	2	0	2	8	1.00547	1.04816	1.05389	1.70273	1.79450

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
-1	1	2	1	6	1	0.74184	1.04104	0.77228	0.73872	0.57050
-1	1	2	1	2	2	1.20126	0.98224	1.17992	0.75366	0.88926
-1	1	2	1	3	2	1.44345	0.94665	1.36644	0.31456	0.42982
-1	1	2	1	4	2	0.42078	0.99095	0.41697	7.50625	3.12988
-1	1	2	1	5	2	2.15409	1.00082	2.15586	0.28818	0.62127
-1	1	2	1	6	2	0.76245	1.00669	0.76755	1.75177	1.34457
-1	1	2	1	2	3	1.06099	1.00867	1.07019	0.75549	0.80852
-1	1	2	1	3	3	1.36916	1.00512	1.37618	0.79081	1.08830
-1	1	2	1	4	3	0.42314	0.99718	0.42195	1.90972	0.80581
-1	1	2	1	5	3	2.11501	1.01092	2.13811	0.43068	0.92084
-1	1	2	1	6	3	0.76533	1.00000	0.76533	1.29867	0.99391
-1	1	2	1	2	4	1.14359	1.02639	1.17377	0.50067	0.58767
-1	1	2	1	3	4	1.13903	1.00682	1.14680	0.79187	0.90812
-1	1	2	1	4	4	0.53191	1.02034	0.54273	2.53323	1.37487
-1	1	2	1	5	4	1.52268	1.08740	1.65577	0.50184	0.83093
-1	1	2	1	6	4	0.92272	1.00890	0.93093	1.87548	1.74594
-1	1	2	1	2	5	1.13098	0.98819	1.11762	0.48223	0.53895
-1	1	2	1	3	5	1.17494	1.01036	1.18711	0.88310	1.04833
-1	1	2	1	4	5	0.72467	0.99221	0.71903	2.37269	1.70603
-1	1	2	1	5	5	0.87871	0.97150	0.85367	0.97376	0.83127
-1	1	2	1	6	5	0.85197	0.99764	0.84996	0.68775	0.58456
-1	1	2	1	2	6	1.19615	1.00005	1.19621	0.75189	0.89942
-1	1	2	1	3	6	1.47007	1.00035	1.47058	0.64901	0.95442
-1	1	2	1	4	6	0.34621	0.99920	0.34593	2.92542	1.01199
-1	1	2	1	5	6	2.22853	0.98783	2.20142	0.48342	1.06420
-1	1	2	1	6	6	0.70625	0.99749	0.70448	1.25879	0.88680
-1	1	2	1	2	7	1.09410	1.00456	1.09909	1.02139	1.12260
-1	1	2	1	3	7	1.02010	0.99345	1.01342	0.68364	0.69281
-1	1	2	1	4	7	0.86874	1.00639	0.87429	1.05466	0.92208
-1	1	2	1	5	7	1.52612	0.97941	1.49471	0.88438	1.32189
-1	1	2	1	6	7	0.87465	0.97539	0.85313	1.87184	1.59693
-1	1	2	1	2	8	1.01379	1.03455	1.04882	1.27581	1.33809

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
-1	1	2	0	3	8	1.08632	1.02660	1.11521	0.39808	0.44395
-1	1	2	0	4	8	1.05775	1.00085	1.05864	2.60808	2.76103
-1	1	2	0	5	8	1.04500	1.00171	1.04679	0.80976	0.84765
-1	1	2	0	6	8	0.84540	0.99084	0.83766	1.20120	1.00619
-1	1	2	0	2	9	0.97602	1.05758	1.03222	0.82174	0.84821
-1	1	2	0	3	9	0.97597	0.97780	0.95430	1.37498	1.31214
-1	1	2	0	4	9	1.06090	0.99257	1.05301	1.00000	1.05301
-1	1	2	0	5	9	1.07099	0.96988	1.03873	0.66027	0.68585
-1	1	2	0	6	9	0.95629	0.98150	0.93860	1.51453	1.42153
-1	1	2	0	2	10	0.98526	0.97758	0.96318	0.68666	0.66138
-1	1	2	0	3	10	0.99916	0.99140	0.99057	1.45632	1.44258
-1	1	2	0	4	10	1.06630	0.99863	1.06484	0.30356	0.32324
-1	1	2	0	5	10	0.83029	0.99652	0.82740	2.75995	2.28358
-1	1	2	0	6	10	1.46907	0.99519	1.46201	0.73910	1.08057
-1	1	2	0	2	11	0.97388	0.99930	0.97320	0.51814	0.50426
-1	1	2	0	3	11	1.21236	0.98680	1.19636	1.97304	2.36047
-1	1	2	0	4	11	1.05290	0.97557	1.02718	0.77769	0.79883
-1	1	2	0	5	11	1.07732	0.96791	1.04274	0.66785	0.69640
-1	1	2	0	6	11	0.72070	0.99238	0.71520	1.49292	1.06774
-1	1	2	0	2	12	0.79044	1.00000	0.79044	1.42348	1.12518
-1	1	2	0	3	12	0.93556	0.99744	0.93317	0.57046	0.53234
-1	1	2	0	4	12	1.17037	1.00000	1.17037	1.47731	1.72900
-1	1	2	0	5	12	0.95315	1.00000	0.95315	0.63023	0.60070
-1	1	2	0	6	12	1.04668	1.00000	1.04668	1.61846	1.69400
-1	1	2	0	2	13	0.60150	1.10195	0.66282	0.80178	0.53144
-1	1	2	0	3	13	0.97501	0.99314	0.96832	0.83686	0.81034
-1	1	2	0	4	13	1.15375	0.99589	1.14901	1.49037	1.71244
-1	1	2	0	5	13	1.14187	0.97908	1.11798	0.71881	0.80362
-1	1	2	0	6	13	1.18181	0.99989	1.18169	0.85373	1.00884
-1	1	2	0	2	14	1.00233	0.99759	0.99992	1.14782	1.14772
-1	1	2	0	3	14	0.98975	1.00687	0.99655	1.24747	1.24317
-1	1	2	0	4	14	0.99168	0.99081	0.98257	0.68004	0.66819

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
-1	1	2	1	3	8	0.97318	0.94374	0.91844	0.51693	0.47477
-1	1	2	1	4	8	0.75854	0.98083	0.74399	3.28179	2.44163
-1	1	2	1	5	8	1.55295	1.00271	1.55716	0.63237	0.98470
-1	1	2	1	6	8	0.77345	1.00433	0.77680	1.09304	0.84907
-1	1	2	1	2	9	1.00539	1.01767	1.02315	0.34750	0.35555
-1	1	2	1	3	9	1.05332	0.94271	0.99298	1.44468	1.43454
-1	1	2	1	4	9	0.48772	1.00004	0.48774	2.12805	1.03793
-1	1	2	1	5	9	1.86558	0.96889	1.80754	0.43484	0.78598
-1	1	2	1	6	9	0.77589	0.97961	0.76007	1.30458	0.99157
-1	1	2	1	2	10	1.04655	1.01287	1.06002	0.89129	0.94479
-1	1	2	1	3	10	0.92694	1.05211	0.97524	0.97234	0.94826
-1	1	2	1	4	10	1.17435	1.00364	1.17863	0.33156	0.39079
-1	1	2	1	5	10	1.35494	0.99564	1.34903	3.51118	4.73668
-1	1	2	1	6	10	0.87725	1.02091	0.89560	1.21343	1.08675
-1	1	2	1	2	11	1.10194	0.99279	1.09400	0.34959	0.38245
-1	1	2	1	3	11	1.14531	0.96879	1.10957	1.76078	1.95371
-1	1	2	1	4	11	0.54076	0.98402	0.53212	1.77871	0.94649
-1	1	2	1	5	11	1.54435	0.96325	1.48759	0.35579	0.52928
-1	1	2	1	6	11	0.81515	0.98790	0.80529	1.38437	1.11482
-1	1	2	1	2	12	1.01172	0.99805	1.00974	0.93775	0.94688
-1	1	2	1	3	12	1.15196	0.99491	1.14610	0.38574	0.44209
-1	1	2	1	4	12	0.61246	0.97576	0.59762	3.25787	1.94696
-1	1	2	1	5	12	0.96553	0.99091	0.95675	0.75089	0.71841
-1	1	2	1	6	12	1.01772	0.97662	0.99393	1.80946	1.79848
-1	1	2	1	2	13	1.05603	1.00735	1.06379	0.52453	0.55799
-1	1	2	1	3	13	1.04255	1.00766	1.05053	0.80969	0.85061
-1	1	2	1	4	13	0.84059	1.00282	0.84296	1.90180	1.60314
-1	1	2	1	5	13	1.24524	1.04810	1.30514	0.50327	0.65684
-1	1	2	1	6	13	0.93830	0.99994	0.93824	1.87460	1.75882
-1	1	2	1	2	14	1.21370	0.99650	1.20946	1.21168	1.46547
-1	1	2	1	3	14	1.12419	0.99859	1.12261	1.12497	1.26290
-1	1	2	1	4	14	0.71366	1.00905	0.72012	0.82471	0.59389

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
-1	1	2	0	5	14	1.06430	1.00019	1.06450	0.66825	0.71135
-1	1	2	0	6	14	0.92407	1.01953	0.94212	1.68676	1.58913
-1	1	2	0	2	15	1.04116	1.00273	1.04399	1.30271	1.36002
-1	1	2	0	3	15	1.22725	1.00298	1.23091	1.02455	1.26113
-1	1	2	0	4	15	0.90847	0.88993	0.80848	0.86094	0.69605
-1	1	2	0	5	15	1.17773	0.97165	1.14434	0.75924	0.86883
-1	1	2	0	6	15	1.02670	0.91716	0.94165	1.04140	0.98064
-1	1	2	0	2	16	1.04763	1.00623	1.05415	0.80682	0.85051
-1	1	2	0	3	16	0.95378	0.99507	0.94909	1.02796	0.97562
-1	1	2	0	4	16	1.02392	1.00314	1.02714	1.17771	1.20967
-1	1	2	0	5	16	1.25904	0.98660	1.24216	0.75321	0.93561
-1	1	2	0	6	16	0.91774	0.97755	0.89714	1.10356	0.99004
-1	1	2	0	2	17	1.03376	0.99303	1.02655	0.94696	0.97210
-1	1	2	0	3	17	0.90972	0.98575	0.89676	0.85866	0.77002
-1	1	2	0	4	17	1.07383	1.00348	1.07757	1.50721	1.62412
-1	1	2	0	5	17	0.98077	1.00771	0.98833	0.74288	0.73421
-1	1	2	0	6	17	1.02211	1.00687	1.02913	1.11077	1.14313
-1	1	2	0	2	18	1.03234	1.00699	1.03955	1.25339	1.30296
-1	1	2	0	3	18	1.01733	0.99927	1.01659	0.94962	0.96538
-1	1	2	0	4	18	1.02731	1.00787	1.03540	1.05305	1.09033
-1	1	2	0	5	18	0.88010	1.01598	0.89416	1.00000	0.89416
-1	1	2	0	6	18	1.04320	1.02314	1.06734	1.00000	1.06734
-1	1	2	0	2	19	1.05168	0.97755	1.02808	0.93791	0.96424
-1	1	2	0	3	19	1.05710	1.01947	1.07768	0.97791	1.05387
-1	1	2	0	4	19	0.96869	0.99185	0.96079	1.09162	1.04882
-1	1	2	0	5	19	1.77599	0.98533	1.74994	1.35435	2.37004
-1	1	2	0	6	19	1.86776	0.94986	1.77411	1.00000	1.77411
-1	1	2	0	2	20	1.10579	1.00136	1.10729	1.72694	1.91223
-1	1	2	0	3	20	0.92191	1.00000	0.92191	0.76086	0.70145
-1	1	2	0	4	20	0.89230	1.02181	0.91177	0.75390	0.68738
-1	1	2	0	5	20	1.29559	0.93664	1.21351	0.69969	0.84908
-1	1	2	0	6	20	0.92544	0.95346	0.88237	1.61408	1.42421

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
-1	1	2	1	5	14	1.38169	1.00065	1.38259	0.54792	0.75755
-1	1	2	1	6	14	0.72122	1.03272	0.74482	3.15544	2.35023
-1	1	2	1	2	15	1.17095	1.01091	1.18373	1.32395	1.56720
-1	1	2	1	3	15	1.38406	0.98702	1.36610	1.25071	1.70859
-1	1	2	1	4	15	0.61881	1.01738	0.62956	0.98329	0.61904
-1	1	2	1	5	15	1.89063	0.97219	1.83805	0.44630	0.82031
-1	1	2	1	6	15	0.97142	0.97010	0.94238	1.83560	1.72983
-1	1	2	1	2	16	1.18628	1.00181	1.18843	0.69424	0.82505
-1	1	2	1	3	16	1.23615	0.99552	1.23062	0.77972	0.95953
-1	1	2	1	4	16	0.40175	1.00023	0.40185	3.28542	1.32024
-1	1	2	1	5	16	1.53121	1.01479	1.55386	0.51254	0.79642
-1	1	2	1	6	16	0.90799	0.91436	0.83022	0.85801	0.71234
-1	1	2	1	2	17	1.44208	0.99359	1.43284	0.62838	0.90036
-1	1	2	1	3	17	0.54746	0.99212	0.54315	1.42570	0.77436
-1	1	2	1	4	17	0.92070	1.00116	0.92177	1.72685	1.59176
-1	1	2	1	5	17	1.37488	1.01169	1.39095	0.47154	0.65589
-1	1	2	1	6	17	0.74488	1.00297	0.74709	2.59288	1.93710
-1	1	2	1	2	18	1.04158	1.00829	1.05022	1.13082	1.18760
-1	1	2	1	3	18	1.16843	1.00251	1.17136	0.69360	0.81245
-1	1	2	1	4	18	0.75758	0.99516	0.75391	1.64818	1.24258
-1	1	2	1	5	18	1.47258	1.02328	1.50686	0.62098	0.93573
-1	1	2	1	6	18	0.84050	1.02379	0.86049	1.38582	1.19248
-1	1	2	1	2	19	1.24190	0.99172	1.23161	0.47827	0.58904
-1	1	2	1	3	19	0.60478	1.02470	0.61971	1.77643	1.10087
-1	1	2	1	4	19	1.10242	0.98707	1.08817	0.94393	1.02716
-1	1	2	1	5	19	0.94881	1.04094	0.98765	2.54229	2.51090
-1	1	2	1	6	19	0.83928	0.97111	0.81504	2.15598	1.75721
-1	1	2	1	2	20	0.95373	1.00094	0.95463	1.79670	1.71518
-1	1	2	1	3	20	0.95822	0.99977	0.95800	0.71874	0.68855
-1	1	2	1	4	20	1.09616	1.02315	1.12153	0.69572	0.78027
-1	1	2	1	5	20	0.77779	1.00417	0.78103	1.17625	0.91869
-1	1	2	1	6	20	1.09272	0.99339	1.08549	1.61350	1.75143

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
-1	1	2	0	2	21	0.99319	0.97806	0.97140	0.73836	0.71724
-1	1	2	0	3	21	0.92242	0.99430	0.91716	1.12603	1.03275
-1	1	2	0	4	21	1.12450	1.01459	1.14091	1.23338	1.40717
-1	1	2	0	5	21	1.10256	1.01838	1.12283	0.88967	0.99895
-1	1	2	0	6	21	1.06369	1.00137	1.06515	0.87870	0.93594
-1	1	2	0	2	22	1.05964	1.00554	1.06551	0.69953	0.74536
-1	1	2	0	3	22	1.09413	0.99047	1.08371	1.52235	1.64978
-1	1	2	0	4	22	0.96170	1.00086	0.96252	0.94103	0.90576
-1	1	2	0	5	22	1.05644	1.02714	1.08511	0.61192	0.66400
-1	1	2	0	6	22	0.91045	1.05869	0.96389	1.43049	1.37883
-1	1	2	0	2	23	0.92116	0.97141	0.89482	0.66409	0.59424
-1	1	2	0	3	23	0.95578	0.99386	0.94990	1.16775	1.10925
-1	1	2	0	4	23	1.18023	1.00078	1.18114	1.28951	1.52310
-1	1	2	0	5	23	1.10418	0.95329	1.05261	0.94124	0.99075
-1	1	2	0	6	23	1.08629	1.01287	1.10027	0.99540	1.09520
-1	1	2	0	2	24	0.96881	0.96294	0.93291	1.00000	0.93291
-1	1	2	0	3	24	0.98393	0.96133	0.94588	1.00000	0.94588
-1	1	2	0	4	24	1.12723	0.95893	1.08093	1.00000	1.08093
-1	1	2	0	5	24	0.74654	0.97519	0.72801	1.00000	0.72801
-1	1	2	0	6	24	1.08787	0.89718	0.97602	1.00000	0.97602
-1	1	2	0	2	25	0.99450	0.99269	0.98723	1.46678	1.44805
-1	1	2	0	3	25	1.06855	0.98102	1.04826	0.87095	0.91298
-1	1	2	0	4	25	1.03760	0.97355	1.01015	1.03611	1.04663
-1	1	2	0	5	25	0.90980	1.00000	0.90980	1.10815	1.00820
-1	1	2	0	6	25	1.05071	0.99747	1.04806	0.61624	0.64585
-1	1	2	0	2	26	1.00382	1.00475	1.00859	1.28319	1.29422
-1	1	2	0	3	26	0.90024	1.04140	0.93751	0.83403	0.78191
-1	1	2	0	4	26	1.02307	0.99371	1.01663	0.79262	0.80580
-1	1	2	0	5	26	1.07678	1.00648	1.08376	1.03116	1.11753
-1	1	2	0	6	26	0.92672	1.00382	0.93026	1.06797	0.99349
-1	1	2	0	2	27	1.08131	1.03070	1.11451	1.72008	1.91705
-1	1	2	0	3	27	0.94971	0.93947	0.89223	0.78584	0.70114

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
-1	1	2	1	2	21	1.18340	0.97515	1.15399	0.76663	0.88469
-1	1	2	1	3	21	1.45993	1.04108	1.51991	0.68256	1.03743
-1	1	2	1	4	21	0.48305	1.05294	0.50862	2.50873	1.27599
-1	1	2	1	5	21	1.14711	1.01984	1.16987	0.91702	1.07279
-1	1	2	1	6	21	0.89192	1.00411	0.89559	1.12295	1.00570
-1	1	2	1	2	22	1.14064	1.00279	1.14382	1.83057	2.09383
-1	1	2	1	3	22	1.03876	1.00675	1.04577	1.07133	1.12036
-1	1	2	1	4	22	0.89099	1.00652	0.89680	1.02572	0.91987
-1	1	2	1	5	22	1.60418	1.03202	1.65555	0.38425	0.63615
-1	1	2	1	6	22	1.11230	0.99003	1.10120	1.04909	1.15527
-1	1	2	1	2	23	1.25170	0.98538	1.23341	0.76536	0.94400
-1	1	2	1	3	23	1.10556	1.00232	1.10812	0.64684	0.71678
-1	1	2	1	4	23	0.70630	0.99549	0.70312	2.27066	1.59654
-1	1	2	1	5	23	1.41442	1.02591	1.45106	0.88571	1.28522
-1	1	2	1	6	23	0.73471	1.01399	0.74499	1.22325	0.91130
-1	1	2	1	2	24	1.25748	1.00174	1.25967	0.70698	0.89057
-1	1	2	1	3	24	1.30915	1.01546	1.32939	0.82703	1.09944
-1	1	2	1	4	24	0.41891	0.99447	0.41659	2.20718	0.91949
-1	1	2	1	5	24	1.70533	1.01218	1.72610	0.48975	0.84536
-1	1	2	1	6	24	0.85114	0.94487	0.80422	1.20476	0.96889
-1	1	2	1	2	25	1.04697	0.98489	1.03116	0.82211	0.84772
-1	1	2	1	3	25	0.84476	1.02763	0.86809	1.02806	0.89245
-1	1	2	1	4	25	0.52565	1.00856	0.53015	2.56029	1.35733
-1	1	2	1	5	25	1.17731	1.04745	1.23318	0.64189	0.79157
-1	1	2	1	6	25	0.85470	1.04866	0.89628	0.94018	0.84267
-1	1	2	1	2	26	1.17044	1.00823	1.18007	0.64754	0.76414
-1	1	2	1	3	26	1.45739	0.99570	1.45113	0.70708	1.02606
-1	1	2	1	4	26	0.36325	1.00083	0.36355	1.89668	0.68954
-1	1	2	1	5	26	1.63407	0.98835	1.61504	0.42857	0.69215
-1	1	2	1	6	26	0.68093	1.00789	0.68631	1.53453	1.05316
-1	1	2	1	2	27	1.13051	1.02607	1.15998	0.92385	1.07165
-1	1	2	1	3	27	0.93927	0.95693	0.89882	0.73683	0.66228

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
-1	1	2	0	4	27	1.05350	0.99783	1.05122	1.27253	1.33771
-1	1	2	0	5	27	1.00218	1.00061	1.00278	0.75070	0.75279
-1	1	2	0	6	27	0.97695	1.01984	0.99633	1.06545	1.06154
-1	1	2	0	2	28	1.07377	0.99325	1.06652	0.89965	0.95949
-1	1	2	0	3	28	0.97347	0.99930	0.97279	1.36746	1.33026
-1	1	2	0	4	28	1.06806	1.00481	1.07320	0.80031	0.85889
-1	1	2	0	5	28	0.90775	1.00370	0.91111	1.30976	1.19333
-1	1	2	0	6	28	1.32273	0.99353	1.31416	0.73360	0.96406
-1	1	2	0	2	29	1.06889	1.00974	1.07930	0.96110	1.03731
-1	1	2	0	3	29	1.08465	1.01166	1.09730	1.64242	1.80222
-1	1	2	0	4	29	1.01625	0.97176	0.98755	0.83371	0.82333
-1	1	2	0	5	29	1.34549	0.97328	1.30954	1.19946	1.57074
-1	1	2	0	6	29	0.72816	0.97784	0.71203	0.57454	0.40909
-1	1	2	0	2	30	1.03044	0.99788	1.02825	1.13728	1.16941
-1	1	2	0	3	30	0.95798	0.98673	0.94526	0.88134	0.83309
-1	1	2	0	4	30	1.02590	1.01365	1.03990	1.23080	1.27992
-1	1	2	0	5	30	1.04310	1.00029	1.04339	0.93977	0.98055
-1	1	2	0	6	30	0.98052	1.00325	0.98370	1.24288	1.22263
-1	1	2	0	2	31	0.94871	0.91229	0.86550	0.95929	0.83027
-1	1	2	0	3	31	0.90948	1.02937	0.93620	1.04243	0.97592
-1	1	2	0	4	31	1.11172	1.01547	1.12892	1.00000	1.12892
-1	1	2	0	5	31	0.94250	0.97320	0.91724	0.85816	0.78714
-1	1	2	0	6	31	0.84498	1.01721	0.85952	1.05989	0.91100
-1	1	2	0	2	32	1.18293	0.99569	1.17783	1.00000	1.17783
-1	1	2	0	3	32	0.96911	0.97361	0.94353	1.00000	0.94353
-1	1	2	0	4	32	1.09053	0.97087	1.05876	1.00000	1.05876
-1	1	2	0	5	32	0.97492	0.93907	0.91552	1.00000	0.91552
-1	1	2	0	6	32	1.29188	0.94017	1.21459	1.00000	1.21459
-1	1	2	0	2	33	1.05595	1.05088	1.10969	1.05619	1.17204
-1	1	2	0	3	33	1.32113	0.97039	1.28201	1.72404	2.21023
-1	1	2	0	4	33	0.83255	0.93077	0.77491	1.00000	0.77491
-1	1	2	0	5	33	1.45230	0.89673	1.30232	1.00000	1.30232

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
-1	1	2	1	4	27	0.69355	0.99997	0.69353	1.95052	1.35274
-1	1	2	1	5	27	1.49750	1.00335	1.50252	0.58331	0.87644
-1	1	2	1	6	27	0.72504	1.01306	0.73451	1.18857	0.87302
-1	1	2	1	2	28	1.14313	0.99645	1.13908	0.74024	0.84319
-1	1	2	1	3	28	1.57683	0.99767	1.57316	1.06508	1.67555
-1	1	2	1	4	28	0.34600	1.00530	0.34784	2.34023	0.81401
-1	1	2	1	5	28	1.68488	1.00683	1.69638	0.78753	1.33595
-1	1	2	1	6	28	0.91914	0.96192	0.88415	0.86316	0.76316
-1	1	2	1	2	29	1.12695	1.00451	1.13204	0.57445	0.65029
-1	1	2	1	3	29	1.14207	1.02710	1.17301	1.77636	2.08370
-1	1	2	1	4	29	0.49000	1.03273	0.50604	1.94307	0.98327
-1	1	2	1	5	29	1.31117	0.95593	1.25339	0.91645	1.14867
-1	1	2	1	6	29	0.70767	1.02239	0.72352	0.44667	0.32317
-1	1	2	1	2	30	1.16857	0.99776	1.16595	1.10428	1.28754
-1	1	2	1	3	30	1.55765	0.99492	1.54973	0.45332	0.70252
-1	1	2	1	4	30	0.40402	0.99149	0.40058	4.86047	1.94702
-1	1	2	1	5	30	2.01900	1.00208	2.02320	0.41332	0.83624
-1	1	2	1	6	30	0.69010	1.00586	0.69415	1.95778	1.35899
-1	1	2	1	2	31	1.10010	0.98357	1.08202	0.70413	0.76189
-1	1	2	1	3	31	1.59613	0.94319	1.50546	0.67031	1.00913
-1	1	2	1	4	31	0.74056	0.99244	0.73496	1.23409	0.90701
-1	1	2	1	5	31	1.19478	1.00960	1.20625	0.90656	1.09354
-1	1	2	1	6	31	0.75565	1.03788	0.78427	1.33164	1.04437
-1	1	2	1	2	32	1.17970	1.00010	1.17982	0.90557	1.06841
-1	1	2	1	3	32	1.62083	0.99522	1.61308	0.53642	0.86529
-1	1	2	1	4	32	0.35196	0.99467	0.35008	2.86879	1.00431
-1	1	2	1	5	32	2.19974	0.97348	2.14139	0.39696	0.85005
-1	1	2	1	6	32	0.74120	0.97546	0.72302	1.92902	1.39471
-1	1	2	1	2	33	1.03127	1.03625	1.06865	0.73988	0.79068
-1	1	2	1	3	33	0.85036	0.93550	0.79551	2.80071	2.22800
-1	1	2	1	4	33	0.85193	0.98371	0.83805	1.03545	0.86776
-1	1	2	1	5	33	1.15857	0.92679	1.07376	0.84609	0.90850

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
-1	1	2	0	6	33	0.70257	0.99620	0.69990	0.58328	0.40824
-1	1	2	0	2	34	1.02393	1.00017	1.02410	1.01529	1.03977
-1	1	2	0	3	34	1.04496	1.00154	1.04657	1.57617	1.64957
-1	1	2	0	4	34	0.98434	0.96447	0.94937	0.74444	0.70675
-1	1	2	0	5	34	1.38724	0.98444	1.36566	1.34328	1.83447
-1	1	2	0	6	34	0.83560	0.99824	0.83414	0.87117	0.72667
-1	1	2	0	2	35	1.00908	0.96630	0.97507	1.16068	1.13174
-1	1	2	0	3	35	0.94787	0.98518	0.93382	1.32592	1.23818
-1	1	2	0	4	35	1.02090	1.00233	1.02328	0.93956	0.96143
-1	1	2	0	5	35	1.09347	1.00499	1.09892	0.88186	0.96910
-1	1	2	0	6	35	0.98047	0.99826	0.97876	0.97322	0.95255
-1	1	2	0	2	36	0.94692	0.99571	0.94286	1.00000	0.94286
-1	1	2	0	3	36	1.00295	0.93108	0.93382	1.00000	0.93382
-1	1	2	0	4	36	1.09282	0.97581	1.06639	1.00000	1.06639
-1	1	2	0	5	36	0.88249	0.96938	0.85546	0.91309	0.78111
-1	1	2	0	6	36	1.30572	0.97392	1.27167	1.09518	1.39272
-1	1	2	0	2	37	1.07355	1.00339	1.07718	1.02910	1.10853
-1	1	2	0	3	37	0.92609	0.98819	0.91516	0.89266	0.81692
-1	1	2	0	4	37	1.03131	1.00627	1.03778	1.07881	1.11957
-1	1	2	0	5	37	1.11066	0.99496	1.10506	0.89735	0.99163
-1	1	2	0	6	37	0.91910	0.99960	0.91873	1.11712	1.02634
-1	1	2	0	2	38	1.06586	1.00775	1.07413	0.86408	0.92813
-1	1	2	0	3	38	1.01434	0.99939	1.01372	1.05445	1.06891
-1	1	2	0	4	38	1.06022	1.00759	1.06827	1.57693	1.68458
-1	1	2	0	5	38	0.99653	0.97348	0.97011	0.84764	0.82230
-1	1	2	0	6	38	1.21809	0.91782	1.11799	0.75728	0.84663
-1	1	2	0	2	39	1.10374	0.99411	1.09724	1.06572	1.16934
-1	1	2	0	3	39	1.26281	1.01018	1.27567	1.01083	1.28948
-1	1	2	0	4	39	0.81873	0.99288	0.81290	0.78848	0.64095
-1	1	2	0	5	39	1.11112	1.05095	1.16772	0.98629	1.15172
-1	1	2	0	6	39	1.02028	0.97176	0.99147	0.83378	0.82667
-1	1	2	0	2	40	1.03506	0.98950	1.02420	0.93223	0.95479

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
-1	1	2	1	6	33	0.81199	1.00761	0.81817	0.46988	0.38444
-1	1	2	1	2	34	1.20935	0.99442	1.20260	0.56951	0.68489
-1	1	2	1	3	34	0.85587	1.00458	0.85979	2.22247	1.91086
-1	1	2	1	4	34	0.68404	0.99175	0.67840	0.96304	0.65333
-1	1	2	1	5	34	1.31574	1.01836	1.33990	1.39555	1.86989
-1	1	2	1	6	34	0.71556	1.00009	0.71563	0.77105	0.55178
-1	1	2	1	2	35	1.17821	1.00242	1.18106	0.68742	0.81189
-1	1	2	1	3	35	1.69526	1.00433	1.70259	0.89733	1.52779
-1	1	2	1	4	35	0.36552	1.00048	0.36569	2.44684	0.89479
-1	1	2	1	5	35	1.34874	1.00688	1.35802	0.69741	0.94709
-1	1	2	1	6	35	0.79986	0.99628	0.79688	1.11718	0.89026
-1	1	2	1	2	36	0.97093	1.00076	0.97166	0.98692	0.95895
-1	1	2	1	3	36	1.10223	0.98451	1.08515	0.86068	0.93396
-1	1	2	1	4	36	0.80844	0.96756	0.78222	1.25795	0.98399
-1	1	2	1	5	36	1.19554	0.98793	1.18111	0.76829	0.90743
-1	1	2	1	6	36	1.09500	0.98671	1.08045	1.23905	1.33873
-1	1	2	1	2	37	1.18279	1.00082	1.18376	0.84337	0.99835
-1	1	2	1	3	37	1.55169	0.99644	1.54616	0.42148	0.65167
-1	1	2	1	4	37	0.39500	0.97938	0.38685	2.89852	1.12129
-1	1	2	1	5	37	1.90322	1.00613	1.91488	0.55037	1.05390
-1	1	2	1	6	37	0.69672	1.00089	0.69734	1.38830	0.96812
-1	1	2	1	2	38	1.04081	1.00353	1.04448	0.65905	0.68837
-1	1	2	1	3	38	1.18362	0.99947	1.18300	0.95412	1.12872
-1	1	2	1	4	38	0.69170	1.00708	0.69660	1.77539	1.23674
-1	1	2	1	5	38	1.09636	0.99852	1.09474	0.79662	0.87209
-1	1	2	1	6	38	0.88881	0.97595	0.86743	0.76259	0.66150
-1	1	2	1	2	39	1.12694	0.99715	1.12373	1.15088	1.29328
-1	1	2	1	3	39	0.99281	0.94818	0.94137	1.19045	1.12065
-1	1	2	1	4	39	1.04722	0.99725	1.04433	0.59458	0.62094
-1	1	2	1	5	39	1.38659	1.03623	1.43683	0.78929	1.13407
-1	1	2	1	6	39	1.15911	0.98070	1.13674	1.12011	1.27327
-1	1	2	1	2	40	1.06365	0.98150	1.04398	1.61781	1.68895

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
-1	1	2	0	3	40	0.95832	0.99170	0.95036	1.32825	1.26232
-1	1	2	0	4	40	1.00761	0.98864	0.99616	0.87737	0.87401
-1	1	2	0	5	40	1.08759	1.02481	1.11457	0.83280	0.92822
-1	1	2	0	6	40	0.90298	0.94682	0.85496	1.28658	1.09997
-1	1	2	0	2	41	1.00073	1.00364	1.00437	0.84863	0.85234
-1	1	2	0	3	41	1.01582	0.99100	1.00668	0.74237	0.74732
-1	1	2	0	4	41	1.08080	1.00531	1.08655	1.35331	1.47043
-1	1	2	0	5	41	0.93120	1.04043	0.96885	1.39449	1.35105
-1	1	2	0	6	41	0.99478	1.05413	1.04863	0.90932	0.95354
-1	1	2	0	2	42	1.03163	1.00668	1.03852	2.32922	2.41894
-1	1	2	0	3	42	1.29605	1.00000	1.29605	1.20806	1.56571
-1	1	2	0	4	42	0.70326	0.90325	0.63522	0.58235	0.36992
-1	1	2	0	5	42	1.03451	1.05311	1.08946	1.09106	1.18867
-1	1	2	0	6	42	1.07810	1.00000	1.07810	0.91427	0.98567
-1	1	2	0	2	43	0.92639	0.99221	0.91918	0.85062	0.78187
-1	1	2	0	3	43	0.94945	1.00000	0.94945	0.86547	0.82172
-1	1	2	0	4	43	0.94640	0.97318	0.92102	0.69049	0.63595
-1	1	2	0	5	43	0.98436	1.03241	1.01626	1.49195	1.51621
-1	1	2	0	6	43	0.79031	1.00000	0.79031	0.77554	0.61292
-1	1	2	0	2	44	1.21224	0.95957	1.16323	1.33350	1.55116
-1	1	2	0	3	44	0.80420	0.98656	0.79340	0.68745	0.54542
-1	1	2	0	4	44	0.98290	0.99993	0.98283	1.11356	1.09445
-1	1	2	0	5	44	1.34498	0.99890	1.34350	0.67293	0.90408
-1	1	2	0	6	44	0.90506	0.98449	0.89103	1.74257	1.55267
-1	1	2	0	2	45	1.02864	0.99971	1.02834	0.91969	0.94575
-1	1	2	0	3	45	1.54918	0.99484	1.54118	0.70585	1.08785
-1	1	2	0	4	45	0.71945	0.98797	0.71079	1.16926	0.83111
-1	1	2	0	5	45	1.31513	0.98132	1.29056	0.88747	1.14533
-1	1	2	0	6	45	0.81065	0.99291	0.80490	1.12025	0.90169
-1	1	2	0	2	46	1.01740	0.99342	1.01071	1.14965	1.16196
-1	1	2	0	3	46	0.84590	0.97386	0.82379	0.91788	0.75614
-1	1	2	0	4	46	1.06136	0.99308	1.05401	1.05463	1.11159

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
-1	1	2	1	3	40	1.40897	0.98127	1.38259	0.60862	0.84147
-1	1	2	1	4	40	0.48878	0.99774	0.48767	1.83670	0.89571
-1	1	2	1	5	40	1.79566	0.99374	1.78441	0.39246	0.70030
-1	1	2	1	6	40	0.82968	0.98385	0.81628	1.98920	1.62375
-1	1	2	1	2	41	1.22960	0.99866	1.22796	0.65259	0.80135
-1	1	2	1	3	41	1.33852	1.04755	1.40216	0.41355	0.57986
-1	1	2	1	4	41	0.38595	1.14000	0.43999	3.32887	1.46466
-1	1	2	1	5	41	1.44768	1.07588	1.55753	1.00814	1.57020
-1	1	2	1	6	41	0.75828	1.03426	0.78426	0.74798	0.58661
-1	1	2	1	2	42	0.88768	0.98251	0.87215	1.67788	1.46336
-1	1	2	1	3	42	0.94926	0.99296	0.94258	3.45988	3.26120
-1	1	2	1	4	42	0.82764	1.12984	0.93510	0.23062	0.21566
-1	1	2	1	5	42	0.85009	1.03814	0.88251	1.23930	1.09370
-1	1	2	1	6	42	1.25611	1.00080	1.25712	1.00722	1.26619
-1	1	2	1	2	43	1.01447	0.99998	1.01445	1.06937	1.08482
-1	1	2	1	3	43	1.01756	1.00156	1.01914	0.84014	0.85622
-1	1	2	1	4	43	0.93824	1.10078	1.03280	0.60851	0.62846
-1	1	2	1	5	43	0.85663	1.02589	0.87881	2.37722	2.08911
-1	1	2	1	6	43	0.99362	1.01031	1.00386	0.43826	0.43996
-1	1	2	1	2	44	1.18208	1.00434	1.18720	1.17993	1.40081
-1	1	2	1	3	44	1.29735	0.99762	1.29426	0.39309	0.50876
-1	1	2	1	4	44	0.62437	1.00131	0.62519	1.57933	0.98738
-1	1	2	1	5	44	1.28261	0.98291	1.26069	0.67316	0.84865
-1	1	2	1	6	44	0.78551	0.97321	0.76447	3.31861	2.53697
-1	1	2	1	2	45	0.89556	1.00006	0.89561	1.16566	1.04398
-1	1	2	1	3	45	0.88698	0.99905	0.88614	1.02390	0.90732
-1	1	2	1	4	45	0.97081	0.99528	0.96623	0.85417	0.82532
-1	1	2	1	5	45	0.88730	0.98948	0.87797	1.25534	1.10215
-1	1	2	1	6	45	0.95282	0.99135	0.94458	0.56609	0.53472
-1	1	2	1	2	46	1.34562	1.01540	1.36634	0.86578	1.18296
-1	1	2	1	3	46	0.70083	1.00222	0.70238	1.26669	0.88970
-1	1	2	1	4	46	0.72366	0.99752	0.72187	1.47538	1.06503

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
-1	1	2	0	5	46	1.24125	0.99673	1.23719	0.81828	1.01237
-1	1	2	0	6	46	0.85370	0.99705	0.85118	1.26244	1.07456
-1	1	2	0	2	47	1.11631	0.96713	1.07962	1.30097	1.40455
-1	1	2	0	3	47	0.84045	0.94600	0.79506	1.00000	0.79506
-1	1	2	0	4	47	1.05413	0.99361	1.04740	1.00000	1.04740
-1	1	2	0	5	47	1.04406	1.00000	1.04406	1.00000	1.04406
-1	1	2	0	6	47	1.04324	1.00000	1.04324	1.00000	1.04324
-1	1	2	0	2	48	1.04876	0.97600	1.02359	1.00000	1.02359
-1	1	2	0	3	48	0.95963	0.97174	0.93251	1.00000	0.93251
-1	1	2	0	4	48	1.07450	1.01670	1.09245	0.93118	1.01726
-1	1	2	0	5	48	1.06328	1.00864	1.07247	1.07391	1.15173
-1	1	2	0	6	48	0.89514	0.98480	0.88153	1.00000	0.88153
-1	1	2	0	2	49	1.01464	1.01269	1.02752	0.92522	0.95069
-1	1	2	0	3	49	0.97861	0.99356	0.97231	1.05485	1.02564
-1	1	2	0	4	49	1.04791	0.99858	1.04642	1.16435	1.21841
-1	1	2	0	5	49	1.22648	1.00377	1.23111	1.03453	1.27362
-1	1	2	0	6	49	1.01509	0.94374	0.95798	0.79325	0.75992
-1	1	2	0	2	50	0.96015	1.00195	0.96202	0.95383	0.91760
-1	1	2	0	3	50	0.91518	1.00125	0.91633	1.20268	1.10205
-1	1	2	0	4	50	1.16524	0.99550	1.15999	1.11007	1.28768
-1	1	2	0	5	50	0.92808	1.00522	0.93293	0.98260	0.91669
-1	1	2	0	6	50	1.48175	1.00000	1.48175	0.63170	0.93602
-1	2	2	0	2	1	1.05229	0.97683	1.02790	1.05747	1.08697
-1	2	2	0	3	1	1.08008	0.96291	1.04002	0.63625	0.66172
-1	2	2	0	4	1	0.99276	1.01324	1.00590	1.39064	1.39885
-1	2	2	0	5	1	0.99127	1.00347	0.99471	1.23998	1.23341
-1	2	2	0	6	1	0.83004	1.00093	0.83081	0.74706	0.62066
-1	2	2	0	2	2	0.98917	1.00661	0.99571	1.05933	1.05479
-1	2	2	0	3	2	1.15092	1.01032	1.16280	0.57801	0.67211
-1	2	2	0	4	2	1.10328	1.01228	1.11682	1.73300	1.93545
-1	2	2	0	5	2	0.99896	1.00298	1.00193	0.80157	0.80312
-1	2	2	0	6	2	1.02356	0.99115	1.01450	1.01649	1.03123

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
-1	1	2	1	5	46	1.43251	1.01255	1.45049	0.75839	1.10004
-1	1	2	1	6	46	0.70115	0.98961	0.69387	1.42001	0.98530
-1	1	2	1	2	47	1.22679	0.99554	1.22131	1.39118	1.69906
-1	1	2	1	3	47	0.87766	0.99332	0.87179	0.88096	0.76801
-1	1	2	1	4	47	0.59685	0.99919	0.59637	1.72482	1.02863
-1	1	2	1	5	47	1.47706	0.99679	1.47231	0.73160	1.07714
-1	1	2	1	6	47	0.67034	0.99975	0.67017	1.48380	0.99440
-1	1	2	1	2	48	1.18029	0.98995	1.16843	1.39284	1.62744
-1	1	2	1	3	48	1.35946	1.00926	1.37205	0.48642	0.66739
-1	1	2	1	4	48	0.48712	0.99711	0.48571	2.53430	1.23093
-1	1	2	1	5	48	1.83780	0.97803	1.79742	0.41297	0.74228
-1	1	2	1	6	48	0.79079	1.01262	0.80078	1.33556	1.06948
-1	1	2	1	2	49	1.16078	1.00870	1.17088	0.94666	1.10842
-1	1	2	1	3	49	1.06773	1.04066	1.11114	0.79155	0.87953
-1	1	2	1	4	49	0.42853	1.00231	0.42952	2.73703	1.17562
-1	1	2	1	5	49	2.00538	0.97434	1.95392	0.49643	0.96998
-1	1	2	1	6	49	0.69014	0.99584	0.68727	1.47553	1.01409
-1	1	2	1	2	50	1.09541	1.00917	1.10546	0.91133	1.00743
-1	1	2	1	3	50	1.37940	0.98544	1.35932	0.80056	1.08822
-1	1	2	1	4	50	0.64537	0.99724	0.64358	1.66059	1.06873
-1	1	2	1	5	50	0.95324	1.00960	0.96239	0.93988	0.90453
-1	1	2	1	6	50	0.93841	0.98006	0.91970	0.67171	0.61777
-1	2	2	1	2	1	1.03260	1.00469	1.03744	0.93687	0.97195
-1	2	2	1	3	1	1.56936	0.97538	1.53073	0.55295	0.84642
-1	2	2	1	4	1	0.52220	1.00449	0.52454	2.85762	1.49893
-1	2	2	1	5	1	1.29356	1.00015	1.29376	0.67931	0.87886
-1	2	2	1	6	1	0.73133	1.04735	0.76596	0.80300	0.61507
-1	2	2	1	2	2	1.03682	1.01699	1.05443	1.31159	1.38298
-1	2	2	1	3	2	1.69485	0.99193	1.68118	0.25603	0.43043
-1	2	2	1	4	2	0.41606	1.02476	0.42636	5.09699	2.17316
-1	2	2	1	5	2	2.01506	1.02636	2.06819	0.32542	0.67303
-1	2	2	1	6	2	0.83285	0.99918	0.83217	1.53923	1.28089

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
-1	2	2	0	2	3	1.03937	0.97354	1.01187	1.00000	1.01187
-1	2	2	0	3	3	1.03415	0.95314	0.98569	1.00000	0.98569
-1	2	2	0	4	3	1.01686	0.96060	0.97680	1.00000	0.97680
-1	2	2	0	5	3	0.97705	0.94122	0.91961	1.00000	0.91961
-1	2	2	0	6	3	1.37840	0.93779	1.29266	1.00000	1.29266
-1	2	2	0	2	4	1.00181	1.00746	1.00929	0.78043	0.78767
-1	2	2	0	3	4	1.08957	1.00292	1.09276	0.93258	1.01908
-1	2	2	0	4	4	1.07091	1.02243	1.09493	1.01207	1.10814
-1	2	2	0	5	4	0.95571	1.04301	0.99681	1.06637	1.06297
-1	2	2	0	6	4	1.07232	0.99200	1.06374	1.20178	1.27838
-1	2	2	0	2	5	0.84098	0.95026	0.79915	0.89758	0.71730
-1	2	2	0	3	5	1.02988	1.00115	1.03106	0.84702	0.87333
-1	2	2	0	4	5	1.17907	0.96110	1.13320	1.31533	1.49054
-1	2	2	0	5	5	1.29867	0.88870	1.15412	0.66305	0.76524
-1	2	2	0	6	5	0.84870	0.98251	0.83385	1.18344	0.98681
-1	2	2	0	2	6	1.00224	0.99841	1.00065	0.98661	0.98725
-1	2	2	0	3	6	0.91776	0.99876	0.91663	1.00445	0.92070
-1	2	2	0	4	6	1.04948	1.01082	1.06084	0.84898	0.90063
-1	2	2	0	5	6	1.10042	0.99334	1.09309	0.97546	1.06627
-1	2	2	0	6	6	0.97071	0.99605	0.96687	1.10037	1.06392
-1	2	2	0	2	7	1.10103	0.96170	1.05886	1.00000	1.05886
-1	2	2	0	3	7	1.07127	0.95004	1.01775	0.79404	0.80814
-1	2	2	0	4	7	0.93984	1.00000	0.93984	1.25938	1.18362
-1	2	2	0	5	7	1.12606	1.00898	1.13618	1.00000	1.13618
-1	2	2	0	6	7	1.02373	0.96368	0.98655	1.00000	0.98655
-1	2	2	0	2	8	0.96035	0.98950	0.95027	1.63011	1.54904
-1	2	2	0	3	8	1.29798	0.95096	1.23434	0.43311	0.53460
-1	2	2	0	4	8	1.08664	1.00678	1.09401	2.33274	2.55204
-1	2	2	0	5	8	0.94185	0.99693	0.93896	1.00000	0.93896
-1	2	2	0	6	8	0.90090	1.00837	0.90845	0.97309	0.88400
-1	2	2	0	2	9	0.95457	1.01115	0.96521	1.02701	0.99128
-1	2	2	0	3	9	1.19479	0.99092	1.18393	1.09671	1.29843

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
-1	2	2	1	2	3	0.98504	1.02329	1.00797	0.78652	0.79279
-1	2	2	1	3	3	1.50028	0.96973	1.45487	0.70032	1.01887
-1	2	2	1	4	3	0.37997	1.03756	0.39424	2.42158	0.95469
-1	2	2	1	5	3	1.79828	1.03588	1.86280	0.41849	0.77957
-1	2	2	1	6	3	1.17328	0.93975	1.10259	1.06000	1.16874
-1	2	2	1	2	4	0.99548	1.02897	1.02432	0.84535	0.86591
-1	2	2	1	3	4	1.25829	0.99948	1.25763	0.57925	0.72848
-1	2	2	1	4	4	0.53844	0.99838	0.53757	2.07751	1.11681
-1	2	2	1	5	4	1.80175	0.99856	1.79915	0.50799	0.91395
-1	2	2	1	6	4	0.88081	0.97791	0.86134	1.83561	1.58110
-1	2	2	1	2	5	0.84551	1.10711	0.93606	0.68804	0.64405
-1	2	2	1	3	5	1.36654	1.06566	1.45626	0.58319	0.84928
-1	2	2	1	4	5	0.69486	1.01009	0.70187	2.62192	1.84024
-1	2	2	1	5	5	0.86489	0.97562	0.84380	0.89999	0.75941
-1	2	2	1	6	5	0.87139	0.99531	0.86730	0.68095	0.59059
-1	2	2	1	2	6	1.17899	1.00118	1.18039	0.76359	0.90133
-1	2	2	1	3	6	1.44282	1.00215	1.44591	0.65399	0.94562
-1	2	2	1	4	6	0.34456	1.00220	0.34531	2.88981	0.99789
-1	2	2	1	5	6	2.10233	0.99089	2.08319	0.50496	1.05192
-1	2	2	1	6	6	0.71525	1.00521	0.71897	1.21136	0.87093
-1	2	2	1	2	7	0.91329	0.99082	0.90491	1.00808	0.91221
-1	2	2	1	3	7	1.04218	0.99505	1.03702	0.95532	0.99069
-1	2	2	1	4	7	1.15531	1.00000	1.15531	0.97442	1.12575
-1	2	2	1	5	7	1.38253	1.00000	1.38253	0.86517	1.19613
-1	2	2	1	6	7	1.12431	1.00061	1.12500	1.35961	1.52956
-1	2	2	1	2	8	0.86480	0.98369	0.85069	1.07545	0.91488
-1	2	2	1	3	8	0.80370	1.00000	0.80370	0.74130	0.59579
-1	2	2	1	4	8	0.82923	1.00000	0.82923	2.32722	1.92981
-1	2	2	1	5	8	1.81625	0.99706	1.81090	0.54724	0.99099
-1	2	2	1	6	8	0.77087	0.99395	0.76620	1.05000	0.80451
-1	2	2	1	2	9	0.90620	0.99961	0.90585	0.38248	0.34647
-1	2	2	1	3	9	1.09708	0.99938	1.09640	1.24758	1.36785

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
-1	2	2	0	4	9	1.03218	0.96964	1.00084	1.00000	1.00084
-1	2	2	0	5	9	0.91124	1.01984	0.92933	0.86295	0.80197
-1	2	2	0	6	9	1.01759	1.00793	1.02566	1.15881	1.18855
-1	2	2	0	2	10	0.98269	0.98447	0.96743	0.82835	0.80137
-1	2	2	0	3	10	1.06548	0.97893	1.04303	1.20722	1.25917
-1	2	2	0	4	10	0.89182	1.05920	0.94461	0.51777	0.48909
-1	2	2	0	5	10	0.94943	1.11495	1.05857	1.64355	1.73981
-1	2	2	0	6	10	1.44940	0.99498	1.44212	0.77843	1.12259
-1	2	2	0	2	11	0.97666	0.97123	0.94856	0.71976	0.68274
-1	2	2	0	3	11	1.27213	1.09444	1.39228	1.38934	1.93435
-1	2	2	0	4	11	0.98777	0.94698	0.93539	0.88666	0.82938
-1	2	2	0	5	11	0.87516	1.01399	0.88740	0.83528	0.74122
-1	2	2	0	6	11	0.76790	1.00547	0.77210	1.08871	0.84060
-1	2	2	0	2	12	1.18929	1.07478	1.27823	1.00000	1.27823
-1	2	2	0	3	12	0.51480	1.00100	0.51532	1.00000	0.51532
-1	2	2	0	4	12	0.99180	1.00827	1.00000	1.00000	1.00000
-1	2	2	0	5	12	0.69136	1.27250	0.87975	1.00000	0.87975
-1	2	2	0	6	12	0.99390	1.00614	1.00000	1.00000	1.00000
-1	2	2	0	2	13	0.76042	0.84957	0.64603	0.80435	0.51963
-1	2	2	0	3	13	0.95446	0.97820	0.93365	0.83451	0.77914
-1	2	2	0	4	13	1.18525	0.99077	1.17431	1.48979	1.74948
-1	2	2	0	5	13	1.13950	0.95510	1.08834	0.74045	0.80586
-1	2	2	0	6	13	1.16428	1.00685	1.17226	1.35053	1.58318
-1	2	2	0	2	14	1.00282	1.02225	1.02514	1.27718	1.30929
-1	2	2	0	3	14	1.03591	1.01647	1.05297	1.00000	1.05297
-1	2	2	0	4	14	0.87883	0.91186	0.80137	0.70553	0.56539
-1	2	2	0	5	14	1.05651	1.01308	1.07033	0.66881	0.71584
-1	2	2	0	6	14	0.87206	1.02975	0.89800	2.11926	1.90310
-1	2	2	0	2	15	0.96579	0.97586	0.94248	1.23245	1.16155
-1	2	2	0	3	15	1.28908	0.99982	1.28884	1.00000	1.28884
-1	2	2	0	4	15	0.89746	0.88245	0.79197	0.86392	0.68420
-1	2	2	0	5	15	1.17650	0.96726	1.13798	0.77726	0.88450

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
-1	2	2	1	4	9	0.46132	0.99506	0.45904	2.04828	0.94024
-1	2	2	1	5	9	1.98017	0.97641	1.93346	0.48730	0.94217
-1	2	2	1	6	9	0.77904	0.99851	0.77788	1.13735	0.88472
-1	2	2	1	2	10	0.98098	0.98907	0.97026	0.73951	0.71751
-1	2	2	1	3	10	0.98773	0.99611	0.98389	1.54342	1.51855
-1	2	2	1	4	10	1.47782	0.98696	1.45855	0.43343	0.63218
-1	2	2	1	5	10	1.67304	1.00556	1.68234	1.65598	2.78593
-1	2	2	1	6	10	0.82666	1.00323	0.82933	1.19944	0.99474
-1	2	2	1	2	11	0.93333	1.00331	0.93642	0.62074	0.58127
-1	2	2	1	3	11	1.04556	1.00000	1.04556	1.08146	1.13073
-1	2	2	1	4	11	0.57746	0.99220	0.57296	1.75102	1.00326
-1	2	2	1	5	11	1.78571	0.98128	1.75228	0.35100	0.61505
-1	2	2	1	6	11	0.85473	0.98133	0.83877	1.21025	1.01512
-1	2	2	1	2	12	1.04221	1.13318	1.18102	1.05855	1.25016
-1	2	2	1	3	12	0.77733	1.13739	0.88413	0.59901	0.52960
-1	2	2	1	4	12	0.65085	1.12703	0.73353	1.85850	1.36327
-1	2	2	1	5	12	1.16458	1.19217	1.38838	0.75089	1.04252
-1	2	2	1	6	12	0.59535	1.24868	0.74340	1.80946	1.34516
-1	2	2	1	2	13	1.05725	0.98621	1.04267	0.40378	0.42101
-1	2	2	1	3	13	1.07388	1.01151	1.08623	0.84282	0.91550
-1	2	2	1	4	13	0.91800	0.99868	0.91679	1.88583	1.72891
-1	2	2	1	5	13	1.27811	1.02301	1.30752	0.53108	0.69439
-1	2	2	1	6	13	0.96997	0.98965	0.95993	1.72067	1.65173
-1	2	2	1	2	14	1.17252	1.00812	1.18205	1.27469	1.50675
-1	2	2	1	3	14	1.12581	0.98708	1.11126	1.07000	1.18904
-1	2	2	1	4	14	0.72595	1.00710	0.73110	0.82654	0.60428
-1	2	2	1	5	14	1.40589	1.00059	1.40673	0.55345	0.77855
-1	2	2	1	6	14	0.73271	1.02227	0.74903	3.18313	2.38425
-1	2	2	1	2	15	1.01663	1.00017	1.01680	1.54733	1.57334
-1	2	2	1	3	15	1.47821	0.98510	1.45619	1.36202	1.98336
-1	2	2	1	4	15	0.74786	1.00194	0.74931	0.77392	0.57991
-1	2	2	1	5	15	1.67456	1.00048	1.67535	0.56844	0.95235

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
-1	2	2	0	6	15	0.88464	0.92306	0.81658	1.31974	1.07767
-1	2	2	0	2	16	1.08271	1.00553	1.08870	0.77001	0.83831
-1	2	2	0	3	16	0.86347	0.98833	0.85340	1.10438	0.94247
-1	2	2	0	4	16	0.96316	1.08887	1.04875	1.40788	1.47651
-1	2	2	0	5	16	1.31833	0.97060	1.27958	0.57704	0.73836
-1	2	2	0	6	16	0.89451	0.95211	0.85168	1.09268	0.93061
-1	2	2	0	2	17	1.02047	1.01215	1.03286	0.93540	0.96614
-1	2	2	0	3	17	0.95031	0.94764	0.90055	0.88610	0.79797
-1	2	2	0	4	17	1.21776	0.98633	1.20112	1.40702	1.68999
-1	2	2	0	5	17	1.00080	0.97404	0.97482	0.74320	0.72449
-1	2	2	0	6	17	0.92910	1.08419	1.00732	1.15098	1.15941
-1	2	2	0	2	18	0.94112	0.94295	0.88743	1.00000	0.88743
-1	2	2	0	3	18	1.21424	0.95580	1.16057	1.00000	1.16057
-1	2	2	0	4	18	1.02977	0.98229	1.01153	1.00000	1.01153
-1	2	2	0	5	18	1.10256	0.93594	1.03192	1.00000	1.03192
-1	2	2	0	6	18	0.99130	0.96159	0.95323	1.00000	0.95323
-1	2	2	0	2	19	0.97732	1.01458	0.99157	1.01682	1.00825
-1	2	2	0	3	19	1.20175	0.99744	1.19868	0.87151	1.04467
-1	2	2	0	4	19	0.94361	0.95732	0.90333	1.13845	1.02840
-1	2	2	0	5	19	1.81020	0.99493	1.80102	1.26128	2.27159
-1	2	2	0	6	19	1.97856	0.90896	1.79843	1.00000	1.79843
-1	2	2	0	2	20	1.08489	0.97517	1.05796	1.61452	1.70809
-1	2	2	0	3	20	0.77600	0.99235	0.77006	0.76659	0.59032
-1	2	2	0	4	20	0.90619	1.00890	0.91426	0.74921	0.68497
-1	2	2	0	5	20	1.28640	0.95940	1.23417	0.72915	0.89989
-1	2	2	0	6	20	0.89612	0.87480	0.78393	1.55291	1.21737
-1	2	2	0	2	21	1.06232	0.98327	1.04455	0.70650	0.73798
-1	2	2	0	3	21	0.92191	0.98701	0.90993	1.11397	1.01364
-1	2	2	0	4	21	1.12777	1.01687	1.14680	1.23326	1.41431
-1	2	2	0	5	21	1.03391	1.05518	1.09096	1.00367	1.09497
-1	2	2	0	6	21	1.00081	1.01306	1.01388	0.82373	0.83517
-1	2	2	0	2	22	0.91811	0.99830	0.91654	1.00000	0.91654

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
-1	2	2	1	6	15	1.24801	0.97805	1.22062	1.47116	1.79573
-1	2	2	1	2	16	1.17769	0.99619	1.17319	0.69915	0.82024
-1	2	2	1	3	16	1.25495	0.97563	1.22437	0.77488	0.94874
-1	2	2	1	4	16	0.33404	1.09822	0.36685	4.11507	1.50962
-1	2	2	1	5	16	1.78046	1.16964	2.08250	0.40892	0.85157
-1	2	2	1	6	16	0.78239	0.95238	0.74513	1.09625	0.81686
-1	2	2	1	2	17	1.38422	1.00883	1.39644	0.66019	0.92192
-1	2	2	1	3	17	0.58294	0.98222	0.57258	1.45722	0.83437
-1	2	2	1	4	17	0.94072	1.00470	0.94514	1.61511	1.52650
-1	2	2	1	5	17	1.39300	1.00876	1.40520	0.47869	0.67266
-1	2	2	1	6	17	0.71571	0.97145	0.69527	2.54709	1.77092
-1	2	2	1	2	18	0.91890	0.99773	0.91682	0.97009	0.88939
-1	2	2	1	3	18	1.24844	1.00375	1.25313	0.85619	1.07291
-1	2	2	1	4	18	0.83096	0.99208	0.82437	1.13589	0.93640
-1	2	2	1	5	18	1.89817	0.98246	1.86487	0.64150	1.19631
-1	2	2	1	6	18	0.73865	0.98957	0.73094	1.45167	1.06109
-1	2	2	1	2	19	1.10018	0.99559	1.09532	0.46546	0.50983
-1	2	2	1	3	19	0.63330	0.99415	0.62959	2.03535	1.28144
-1	2	2	1	4	19	1.19218	1.00830	1.20207	0.78058	0.93831
-1	2	2	1	5	19	0.87620	1.00817	0.88335	2.72538	2.40747
-1	2	2	1	6	19	0.70383	0.99545	0.70063	2.70105	1.89243
-1	2	2	1	2	20	0.93339	0.99840	0.93190	1.13811	1.06060
-1	2	2	1	3	20	0.95040	1.00140	0.95173	0.74560	0.70962
-1	2	2	1	4	20	1.30345	0.97516	1.27107	1.12487	1.42979
-1	2	2	1	5	20	0.65878	1.00027	0.65896	1.69425	1.11644
-1	2	2	1	6	20	1.04936	1.00110	1.05051	0.72288	0.75940
-1	2	2	1	2	21	1.13023	0.98685	1.11537	0.82920	0.92487
-1	2	2	1	3	21	1.66460	1.02331	1.70340	0.64513	1.09892
-1	2	2	1	4	21	0.47984	1.02483	0.49175	2.46083	1.21012
-1	2	2	1	5	21	1.11998	1.02989	1.15346	0.93732	1.08116
-1	2	2	1	6	21	0.88093	1.01236	0.89181	1.12745	1.00547
-1	2	2	1	2	22	0.95176	1.00251	0.95415	2.60754	2.48797

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
-1	2	2	0	3	22	1.10208	0.97713	1.07687	1.00000	1.07687
-1	2	2	0	4	22	0.95021	1.08058	1.02677	1.00000	1.02677
-1	2	2	0	5	22	1.04067	0.99353	1.03394	0.57824	0.59787
-1	2	2	0	6	22	0.76673	0.98304	0.75373	1.41252	1.06466
-1	2	2	0	2	23	0.87072	0.93518	0.81428	0.67964	0.55341
-1	2	2	0	3	23	1.04613	0.96803	1.01269	1.14128	1.15576
-1	2	2	0	4	23	1.42868	0.95389	1.36281	1.28923	1.75697
-1	2	2	0	5	23	1.03103	0.89778	0.92564	1.00000	0.92564
-1	2	2	0	6	23	1.03509	1.02340	1.05932	1.00000	1.05932
-1	2	2	0	2	24	0.55231	0.52673	0.29092	1.00000	0.29092
-1	2	2	0	3	24	6.49213	0.50981	3.30972	1.00000	3.30972
-1	2	2	0	4	24	0.82745	0.65108	0.53874	1.00000	0.53874
-1	2	2	0	5	24	0.74094	0.85653	0.63463	1.00000	0.63463
-1	2	2	0	6	24	1.49537	0.82555	1.23450	1.00000	1.23450
-1	2	2	0	2	25	1.00857	1.01043	1.01909	1.46218	1.49009
-1	2	2	0	3	25	1.13822	0.99945	1.13760	0.87453	0.99486
-1	2	2	0	4	25	1.06610	0.96005	1.02351	1.14348	1.17036
-1	2	2	0	5	25	0.96033	0.99033	0.95105	1.00000	0.95105
-1	2	2	0	6	25	1.07544	0.98851	1.06309	0.66811	0.71026
-1	2	2	0	2	26	0.96275	0.99572	0.95863	1.38298	1.32577
-1	2	2	0	3	26	0.96351	1.03279	0.99510	0.81182	0.80784
-1	2	2	0	4	26	1.03353	0.99992	1.03345	0.76134	0.78681
-1	2	2	0	5	26	1.08353	1.01324	1.09788	1.03951	1.14125
-1	2	2	0	6	26	0.67297	1.03685	0.69777	1.46857	1.02472
-1	2	2	0	2	27	1.19267	0.92983	1.10897	1.66591	1.84745
-1	2	2	0	3	27	0.87811	0.84731	0.74403	0.78890	0.58697
-1	2	2	0	4	27	1.10274	0.99852	1.10111	1.26759	1.39575
-1	2	2	0	5	27	1.02641	0.99807	1.02442	0.75122	0.76956
-1	2	2	0	6	27	1.00192	1.02079	1.02275	1.06479	1.08901
-1	2	2	0	2	28	0.97976	1.07022	1.04855	1.00000	1.04855
-1	2	2	0	3	28	1.74473	0.99871	1.74247	1.00000	1.74247
-1	2	2	0	4	28	0.99997	1.01181	1.01178	0.73482	0.74347

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
-1	2	2	1	3	22	1.14175	1.00390	1.14621	0.81799	0.93758
-1	2	2	1	4	22	1.02688	0.98278	1.00919	1.07568	1.08556
-1	2	2	1	5	22	1.69225	0.98899	1.67362	0.56708	0.94908
-1	2	2	1	6	22	1.33607	1.00988	1.34927	0.57564	0.77670
-1	2	2	1	2	23	1.19906	1.01482	1.21683	0.80636	0.98120
-1	2	2	1	3	23	1.31179	0.96212	1.26210	0.67400	0.85066
-1	2	2	1	4	23	0.71309	0.99302	0.70812	2.18106	1.54445
-1	2	2	1	5	23	1.40322	1.03785	1.45633	0.83869	1.22141
-1	2	2	1	6	23	0.72738	1.01398	0.73755	1.23042	0.90750
-1	2	2	1	2	24	1.06834	0.85498	0.91342	0.69484	0.63468
-1	2	2	1	3	24	0.69212	0.84412	0.58423	0.85515	0.49961
-1	2	2	1	4	24	0.38388	0.96547	0.37062	2.30569	0.85454
-1	2	2	1	5	24	1.78408	1.01904	1.81806	0.45179	0.82137
-1	2	2	1	6	24	0.85585	0.94003	0.80453	1.28735	1.03571
-1	2	2	1	2	25	0.87469	1.00963	0.88311	1.07048	0.94536
-1	2	2	1	3	25	0.87174	0.99996	0.87170	0.79494	0.69295
-1	2	2	1	4	25	0.47613	0.99791	0.47513	3.25989	1.54887
-1	2	2	1	5	25	1.61635	1.00721	1.62800	0.48458	0.78889
-1	2	2	1	6	25	0.86997	1.01804	0.88566	0.94032	0.83280
-1	2	2	1	2	26	1.12084	1.01403	1.13656	0.78043	0.88700
-1	2	2	1	3	26	1.54159	1.04468	1.61047	0.58096	0.93561
-1	2	2	1	4	26	0.36051	0.99906	0.36017	1.90904	0.68759
-1	2	2	1	5	26	1.60065	1.00172	1.60341	0.43430	0.69637
-1	2	2	1	6	26	0.66838	1.00087	0.66896	1.51135	1.01104
-1	2	2	1	2	27	1.07827	0.96414	1.03961	0.84929	0.88292
-1	2	2	1	3	27	0.97876	0.96678	0.94625	0.73490	0.69539
-1	2	2	1	4	27	0.73831	1.00037	0.73858	1.84570	1.36320
-1	2	2	1	5	27	1.43115	1.00135	1.43308	0.65275	0.93544
-1	2	2	1	6	27	0.77654	1.02302	0.79441	1.07630	0.85503
-1	2	2	1	2	28	1.16981	1.28856	1.50738	0.81752	1.23232
-1	2	2	1	3	28	2.05249	1.01601	2.08535	0.77976	1.62607
-1	2	2	1	4	28	0.51863	1.46693	0.76079	1.88142	1.43138

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
-1	2	2	0	5	28	0.95510	0.99410	0.94946	1.36088	1.29211
-1	2	2	0	6	28	1.33481	0.90657	1.21010	0.68769	0.83218
-1	2	2	0	2	29	0.96101	1.03383	0.99352	1.38140	1.37244
-1	2	2	0	3	29	1.14595	1.04356	1.19586	1.04388	1.24833
-1	2	2	0	4	29	1.10633	0.93700	1.03663	1.00000	1.03663
-1	2	2	0	5	29	1.66364	0.91740	1.52622	1.00000	1.52622
-1	2	2	0	6	29	0.61347	0.90750	0.55672	0.62743	0.34930
-1	2	2	0	2	30	1.10076	0.96924	1.06690	1.15017	1.22712
-1	2	2	0	3	30	0.99828	0.94970	0.94806	0.91666	0.86905
-1	2	2	0	4	30	1.09909	1.00113	1.10034	1.15856	1.27481
-1	2	2	0	5	30	0.97371	1.03513	1.00792	1.08638	1.09498
-1	2	2	0	6	30	1.02629	1.03350	1.06067	1.06585	1.13052
-1	2	2	0	2	31	0.96255	0.90262	0.86881	1.00000	0.86881
-1	2	2	0	3	31	1.12025	0.96232	1.07804	1.00000	1.07804
-1	2	2	0	4	31	1.32075	0.96822	1.27878	1.00000	1.27878
-1	2	2	0	5	31	0.93898	0.96060	0.90198	0.87641	0.79051
-1	2	2	0	6	31	0.94275	0.99546	0.93847	1.14101	1.07080
-1	2	2	0	2	32	1.45472	0.90774	1.32050	1.00000	1.32050
-1	2	2	0	3	32	0.91427	0.90297	0.82556	1.00000	0.82556
-1	2	2	0	4	32	1.05961	0.89682	0.95028	1.00000	0.95028
-1	2	2	0	5	32	1.00591	0.86121	0.86630	1.00000	0.86630
-1	2	2	0	6	32	1.58291	0.88569	1.40196	1.00000	1.40196
-1	2	2	0	2	33	0.98409	1.03091	1.01451	1.02955	1.04449
-1	2	2	0	3	33	1.56499	0.88602	1.38660	1.68724	2.33953
-1	2	2	0	4	33	0.98478	0.92579	0.91170	1.00000	0.91170
-1	2	2	0	5	33	1.33774	0.90710	1.21346	1.00000	1.21346
-1	2	2	0	6	33	0.69206	0.88334	0.61133	0.59608	0.36440
-1	2	2	0	2	34	0.94133	1.03059	0.97013	1.13433	1.10045
-1	2	2	0	3	34	1.06886	1.03237	1.10347	1.38362	1.52678
-1	2	2	0	4	34	0.99419	0.99537	0.98959	0.77604	0.76796
-1	2	2	0	5	34	1.92119	0.94784	1.82099	1.28859	2.34651
-1	2	2	0	6	34	0.62880	0.95982	0.60353	1.00000	0.60353

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
-1	2	2	1	5	28	0.52746	1.42337	0.75077	0.94339	0.70827
-1	2	2	1	6	28	1.29484	1.31396	1.70137	0.71017	1.20826
-1	2	2	1	2	29	0.81622	1.07958	0.88118	0.93244	0.82165
-1	2	2	1	3	29	1.29136	1.11838	1.44424	1.12404	1.62339
-1	2	2	1	4	29	0.50653	1.04640	0.53004	1.93318	1.02466
-1	2	2	1	5	29	1.29033	0.93978	1.21263	0.89176	1.08138
-1	2	2	1	6	29	0.71505	1.03380	0.73922	0.41897	0.30971
-1	2	2	1	2	30	1.13426	0.98495	1.11719	1.10021	1.22915
-1	2	2	1	3	30	1.64481	0.93991	1.54597	0.49254	0.76144
-1	2	2	1	4	30	0.39114	0.99093	0.38759	4.50086	1.74448
-1	2	2	1	5	30	1.91238	1.03398	1.97736	0.46998	0.92932
-1	2	2	1	6	30	0.70862	1.04131	0.73790	1.69272	1.24906
-1	2	2	1	2	31	0.94152	1.01844	0.95887	1.09944	1.05423
-1	2	2	1	3	31	2.07465	0.99755	2.06958	0.48470	1.00313
-1	2	2	1	4	31	0.72753	0.96453	0.70172	1.09966	0.77165
-1	2	2	1	5	31	1.26164	1.01841	1.28487	0.91205	1.17187
-1	2	2	1	6	31	0.75536	1.01547	0.76704	1.75903	1.34925
-1	2	2	1	2	32	1.00697	1.05507	1.06243	1.11179	1.18120
-1	2	2	1	3	32	1.78978	1.03801	1.85781	0.42082	0.78181
-1	2	2	1	4	32	0.35229	0.99120	0.34919	2.85401	0.99658
-1	2	2	1	5	32	2.19567	0.97054	2.13099	0.39673	0.84542
-1	2	2	1	6	32	0.72244	0.98026	0.70818	2.10800	1.49285
-1	2	2	1	2	33	0.92331	0.98622	0.91059	0.51273	0.46689
-1	2	2	1	3	33	0.75108	1.01069	0.75911	4.14572	3.14705
-1	2	2	1	4	33	0.83147	0.99947	0.83102	1.08492	0.90159
-1	2	2	1	5	33	1.30796	0.98959	1.29435	0.74414	0.96317
-1	2	2	1	6	33	0.90257	1.01769	0.91854	0.36955	0.33945
-1	2	2	1	2	34	1.13197	1.01059	1.14396	0.60627	0.69355
-1	2	2	1	3	34	0.86075	1.00480	0.86488	2.02462	1.75105
-1	2	2	1	4	34	0.65907	0.99299	0.65445	1.02829	0.67297
-1	2	2	1	5	34	1.44329	1.00504	1.45056	1.28243	1.86024
-1	2	2	1	6	34	0.71050	0.99036	0.70365	0.78888	0.55509

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
-1	2	2	0	2	35	1.03511	0.94254	0.97564	1.18119	1.15241
-1	2	2	0	3	35	0.99176	0.93044	0.92277	1.40992	1.30104
-1	2	2	0	4	35	1.02161	1.00815	1.02993	0.87419	0.90035
-1	2	2	0	5	35	1.08794	1.00399	1.09228	0.87984	0.96102
-1	2	2	0	6	35	0.94867	0.99323	0.94225	1.09872	1.03527
-1	2	2	0	2	36	0.94100	0.99305	0.93447	1.00000	0.93447
-1	2	2	0	3	36	1.11255	0.92684	1.03115	1.00000	1.03115
-1	2	2	0	4	36	1.10186	0.94261	1.03863	1.00000	1.03863
-1	2	2	0	5	36	0.85529	0.93916	0.80326	1.00000	0.80326
-1	2	2	0	6	36	1.53957	0.96611	1.48739	1.00000	1.48739
-1	2	2	0	2	37	1.13564	1.00156	1.13741	1.00000	1.13741
-1	2	2	0	3	37	0.94535	0.96863	0.91570	0.88503	0.81042
-1	2	2	0	4	37	1.14529	0.97727	1.11926	1.12991	1.26467
-1	2	2	0	5	37	1.05021	0.92397	0.97036	0.85880	0.83334
-1	2	2	0	6	37	0.91798	1.00138	0.91925	1.11385	1.02390
-1	2	2	0	2	38	0.94079	1.05406	0.99165	1.16156	1.15186
-1	2	2	0	3	38	1.16003	1.02769	1.19215	0.83274	0.99275
-1	2	2	0	4	38	1.03311	1.00105	1.03420	1.57546	1.62934
-1	2	2	0	5	38	1.02714	0.99147	1.01837	0.94599	0.96337
-1	2	2	0	6	38	1.13183	0.96834	1.09600	0.79831	0.87495
-1	2	2	0	2	39	1.09137	0.98513	1.07514	1.05583	1.13517
-1	2	2	0	3	39	1.40041	0.94352	1.32131	1.00000	1.32131
-1	2	2	0	4	39	0.75437	0.96552	0.72836	0.79836	0.58149
-1	2	2	0	5	39	1.18114	1.03054	1.21720	0.97633	1.18839
-1	2	2	0	6	39	0.84758	0.92734	0.78599	1.09285	0.85897
-1	2	2	0	2	40	1.05290	0.96449	1.01551	1.01150	1.02720
-1	2	2	0	3	40	1.07395	0.98136	1.05393	1.21915	1.28489
-1	2	2	0	4	40	1.03948	0.96920	1.00746	0.90391	0.91065
-1	2	2	0	5	40	1.07271	1.01721	1.09117	0.83128	0.90706
-1	2	2	0	6	40	0.87533	0.96650	0.84601	1.33085	1.12591
-1	2	2	0	2	41	1.05850	1.00146	1.06004	0.82615	0.87575
-1	2	2	0	3	41	0.99642	1.00066	0.99708	0.73722	0.73507

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
-1	2	2	1	2	35	1.13327	0.99847	1.13153	0.61977	0.70129
-1	2	2	1	3	35	1.55005	1.01646	1.57557	0.96591	1.52187
-1	2	2	1	4	35	0.36910	1.01581	0.37494	2.29656	0.86106
-1	2	2	1	5	35	1.35759	1.01711	1.38083	0.67195	0.92784
-1	2	2	1	6	35	0.81554	0.99480	0.81129	1.10551	0.89690
-1	2	2	1	2	36	0.93892	0.99983	0.93876	1.04560	0.98156
-1	2	2	1	3	36	1.13494	1.00477	1.14036	0.81366	0.92787
-1	2	2	1	4	36	0.76771	1.00005	0.76775	1.29924	0.99749
-1	2	2	1	5	36	1.13941	1.00065	1.14015	0.74002	0.84373
-1	2	2	1	6	36	1.11764	0.98545	1.10138	1.24585	1.37215
-1	2	2	1	2	37	1.17190	0.99996	1.17186	0.84689	0.99243
-1	2	2	1	3	37	1.67746	0.95592	1.60351	0.42871	0.68744
-1	2	2	1	4	37	0.38411	0.99755	0.38317	3.17984	1.21841
-1	2	2	1	5	37	1.90465	0.95282	1.81479	0.48724	0.88424
-1	2	2	1	6	37	0.70243	0.99574	0.69944	1.42052	0.99356
-1	2	2	1	2	38	0.86495	0.99972	0.86471	0.91615	0.79220
-1	2	2	1	3	38	1.16827	1.00000	1.16827	0.86070	1.00553
-1	2	2	1	4	38	0.85841	1.00010	0.85850	1.60137	1.37477
-1	2	2	1	5	38	0.92728	1.00000	0.92728	0.84073	0.77959
-1	2	2	1	6	38	0.98243	0.98659	0.96925	0.80905	0.78417
-1	2	2	1	2	39	0.85851	1.00390	0.86185	1.46659	1.26399
-1	2	2	1	3	39	0.99238	0.99814	0.99053	1.13564	1.12489
-1	2	2	1	4	39	1.38539	1.00000	1.38539	0.50070	0.69367
-1	2	2	1	5	39	1.38624	0.99984	1.38602	0.89975	1.24707
-1	2	2	1	6	39	1.34555	1.01178	1.36140	0.94534	1.28699
-1	2	2	1	2	40	1.00157	0.98098	0.98252	1.89627	1.86312
-1	2	2	1	3	40	1.54247	1.00243	1.54623	0.49806	0.77011
-1	2	2	1	4	40	0.47408	1.01291	0.48020	1.89779	0.91132
-1	2	2	1	5	40	1.76607	1.01742	1.79683	0.39238	0.70503
-1	2	2	1	6	40	0.83022	0.99777	0.82837	1.94646	1.61239
-1	2	2	1	2	41	1.09758	1.00280	1.10066	0.73243	0.80615
-1	2	2	1	3	41	2.01763	1.00432	2.02635	0.33099	0.67069

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
-1	2	2	0	4	41	1.08827	0.97543	1.06153	1.39268	1.47837
-1	2	2	0	5	41	0.92131	1.09117	1.00531	1.44189	1.44955
-1	2	2	0	6	41	1.91770	1.04565	2.00525	1.00000	2.00525
-1	2	2	0	2	42	1.04062	0.99637	1.03684	1.68238	1.74436
-1	2	2	0	3	42	1.63773	1.14208	1.87042	1.19034	2.22644
-1	2	2	0	4	42	0.60553	0.71180	0.43101	0.58360	0.25154
-1	2	2	0	5	42	0.94827	1.08635	1.03016	1.20556	1.24191
-1	2	2	0	6	42	1.08394	1.00202	1.08613	1.03086	1.11965
-1	2	2	0	2	43	1.19885	0.94233	1.12971	1.00000	1.12971
-1	2	2	0	3	43	0.73588	0.98163	0.72236	1.00000	0.72236
-1	2	2	0	4	43	0.95644	0.93052	0.88998	0.56511	0.50293
-1	2	2	0	5	43	0.91225	1.02389	0.93404	1.76958	1.65285
-1	2	2	0	6	43	0.84329	1.04024	0.87722	0.59536	0.52227
-1	2	2	0	2	44	1.19825	0.95841	1.14841	1.32814	1.52525
-1	2	2	0	3	44	0.80763	0.98437	0.79500	0.72732	0.57822
-1	2	2	0	4	44	1.00731	0.99536	1.00264	1.06950	1.07233
-1	2	2	0	5	44	1.27115	0.99937	1.27035	0.70482	0.89537
-1	2	2	0	6	44	0.91670	0.99602	0.91305	1.82396	1.66538
-1	2	2	0	2	45	0.88475	0.99893	0.88380	1.04858	0.92674
-1	2	2	0	3	45	2.17936	1.01378	2.20939	0.49012	1.08287
-1	2	2	0	4	45	0.72128	0.97947	0.70647	1.18268	0.83553
-1	2	2	0	5	45	1.25515	0.99020	1.24285	0.93270	1.15921
-1	2	2	0	6	45	0.81024	1.00265	0.81239	1.08082	0.87804
-1	2	2	0	2	46	1.00590	0.99048	0.99633	1.14156	1.13737
-1	2	2	0	3	46	0.77707	0.96414	0.74920	0.98395	0.73718
-1	2	2	0	4	46	1.08075	0.98032	1.05948	1.01632	1.07677
-1	2	2	0	5	46	1.50022	0.90999	1.36519	0.80743	1.10230
-1	2	2	0	6	46	1.40614	0.87906	1.23609	1.23849	1.53088
-1	2	2	0	2	47	1.16133	0.98645	1.14559	1.08202	1.23956
-1	2	2	0	3	47	0.80397	0.88584	0.71219	1.00000	0.71219
-1	2	2	0	4	47	1.05695	0.99427	1.05089	1.00000	1.05089
-1	2	2	0	5	47	1.19653	0.92613	1.10814	1.00000	1.10814

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
-1	2	2	1	4	41	0.33436	0.98290	0.32864	3.33095	1.09467
-1	2	2	1	5	41	1.47233	1.09709	1.61529	0.94810	1.53145
-1	2	2	1	6	41	1.07742	0.93360	1.00588	1.03648	1.04257
-1	2	2	1	2	42	0.83216	1.00000	0.83216	0.85395	0.71063
-1	2	2	1	3	42	1.01010	0.95860	0.96828	3.20134	3.09978
-1	2	2	1	4	42	0.85529	1.08261	0.92594	0.40594	0.37588
-1	2	2	1	5	42	0.99890	0.99669	0.99559	0.69042	0.68738
-1	2	2	1	6	42	1.22425	0.99626	1.21967	1.12812	1.37594
-1	2	2	1	2	43	1.01153	0.99846	1.00998	1.07173	1.08242
-1	2	2	1	3	43	1.00833	0.98928	0.99752	0.86795	0.86579
-1	2	2	1	4	43	0.98937	1.09856	1.08688	0.62311	0.67725
-1	2	2	1	5	43	0.79903	1.00160	0.80031	2.31686	1.85421
-1	2	2	1	6	43	0.97078	1.04228	1.01182	0.72892	0.73754
-1	2	2	1	2	44	1.10848	1.00523	1.11428	1.09034	1.21494
-1	2	2	1	3	44	1.42488	0.99075	1.41171	0.35548	0.50183
-1	2	2	1	4	44	0.63757	1.00457	0.64049	1.60533	1.02819
-1	2	2	1	5	44	1.29175	0.99011	1.27897	0.64762	0.82829
-1	2	2	1	6	44	0.78573	0.97219	0.76387	3.31860	2.53499
-1	2	2	1	2	45	0.86893	1.00000	0.86893	1.33964	1.16405
-1	2	2	1	3	45	0.78691	1.00000	0.78691	0.87969	0.69224
-1	2	2	1	4	45	1.22582	1.00286	1.22932	0.63958	0.78625
-1	2	2	1	5	45	0.85473	1.00048	0.85514	1.30678	1.11748
-1	2	2	1	6	45	1.01836	0.98796	1.00610	0.49335	0.49636
-1	2	2	1	2	46	1.33562	1.01623	1.35729	0.87273	1.18455
-1	2	2	1	3	46	0.70721	0.99983	0.70709	1.24599	0.88102
-1	2	2	1	4	46	0.72542	0.99761	0.72369	1.47833	1.06985
-1	2	2	1	5	46	1.43711	1.00357	1.44224	0.75993	1.09601
-1	2	2	1	6	46	0.76957	0.96507	0.74269	1.40756	1.04538
-1	2	2	1	2	47	1.23942	0.99725	1.23601	1.18682	1.46693
-1	2	2	1	3	47	0.87563	0.97810	0.85645	0.88192	0.75532
-1	2	2	1	4	47	0.59250	0.99880	0.59178	1.75107	1.03625
-1	2	2	1	5	47	1.46300	0.98687	1.44379	0.72167	1.04195

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
-1	2	2	0	6	47	0.97812	0.97727	0.95589	1.00000	0.95589
-1	2	2	0	2	48	1.03974	0.95068	0.98846	1.00000	0.98846
-1	2	2	0	3	48	0.97196	0.96301	0.93600	1.00000	0.93600
-1	2	2	0	4	48	1.06450	1.01539	1.08089	0.93314	1.00862
-1	2	2	0	5	48	1.14195	1.00428	1.14684	1.07165	1.22902
-1	2	2	0	6	48	0.91159	0.97962	0.89301	1.00000	0.89301
-1	2	2	0	2	49	1.17567	0.99796	1.17327	0.83525	0.97998
-1	2	2	0	3	49	0.87461	1.03027	0.90108	1.19725	1.07882
-1	2	2	0	4	49	1.08903	1.00564	1.09517	1.00000	1.09517
-1	2	2	0	5	49	1.32001	0.95392	1.25917	1.00000	1.25917
-1	2	2	0	6	49	0.81482	0.91633	0.74664	0.99953	0.74630
-1	2	2	0	2	50	0.82211	1.00967	0.83006	0.95755	0.79483
-1	2	2	0	3	50	0.97395	0.99737	0.97139	1.12161	1.08953
-1	2	2	0	4	50	1.12263	0.99767	1.12000	1.03963	1.16439
-1	2	2	0	5	50	0.81394	1.00799	0.82044	1.00000	0.82044
-1	2	2	0	6	50	1.22202	0.93823	1.14654	0.72856	0.83532

I/O	C/V	Bad	H	Yr	Frm	T	Ω	H	E	P
-1	2	2	1	6	47	0.67671	0.99621	0.67414	1.48929	1.00400
-1	2	2	1	2	48	1.11763	0.99642	1.11363	1.51697	1.68935
-1	2	2	1	3	48	1.49376	1.00158	1.49612	0.44051	0.65906
-1	2	2	1	4	48	0.50342	0.97173	0.48918	2.63692	1.28994
-1	2	2	1	5	48	1.79845	1.00602	1.80927	0.44592	0.80679
-1	2	2	1	6	48	0.78768	1.06569	0.83943	1.25053	1.04973
-1	2	2	1	2	49	1.15374	1.00030	1.15409	0.94468	1.09024
-1	2	2	1	3	49	1.16246	1.00612	1.16958	0.85804	1.00355
-1	2	2	1	4	49	0.39265	1.00891	0.39615	3.00462	1.19029
-1	2	2	1	5	49	2.13892	0.97042	2.07565	0.41991	0.87158
-1	2	2	1	6	49	0.68681	0.99598	0.68405	1.49129	1.02011
-1	2	2	1	2	50	1.09369	1.00078	1.09455	0.87647	0.95933
-1	2	2	1	3	50	1.37006	0.96194	1.31791	0.76763	1.01167
-1	2	2	1	4	50	0.63537	1.00657	0.63955	1.67813	1.07324
-1	2	2	1	5	50	0.94054	1.01063	0.95054	0.93405	0.88785
-1	2	2	1	6	50	0.94461	0.98850	0.93374	0.68013	0.63506

Chapter 6

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