Diminishing and negative welfare returns of economic growth: an index of sustainable economic welfare (ISEW) for Thailand

Matthew Clarke\textsuperscript{a,}\textsuperscript{*}, Sardar M.N. Islam\textsuperscript{b}

\textsuperscript{a}School of Social Science and Planning, RMIT University, G.P.O. Box 2476V, Melbourne, Victoria 3001, Australia
\textsuperscript{b}Centre for Strategic Economic Studies, Victoria University, P.O. Box 14428, Melbourne City MC, Victoria 8001, Australia

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Abstract

Thailand has achieved remarkable levels of economic growth over the last three decades. This sustained economic growth has played a major role in reducing absolute poverty levels from nearly one third of the population in 1975 to presently less than 10\%, thus increasing the welfare of many Thais. This performance ranks Thailand as one of the world’s most successful economies during this period. However, an increasing number of studies have begun to find that at a certain point achieving economic growth stops improving welfare and actually begins to diminish it due to the hidden and traditionally unreported costs of associated with this growth. With one exception, these new studies have focussed on high-income countries. This study will estimate an index of sustainable economic welfare (ISEW) for a developing country, Thailand, over a 25-year period, 1975–1999. This paper concludes that even low–middle income countries are beginning to approach the point in which economic growth produces both diminishing and, at times, negative welfare returns as the costs of achieving economic growth begin to outweigh the benefits. These results are important for policy makers and highlight the importance of implementing alternative welfare enhancing interventions that must be considered in place of simply achieving economic growth. The emphasis of this paper is not on the methodology of estimating the ISEW for Thailand, but rather on the policy implications for developing countries of diminishing and negative welfare returns brought about through the achievement of economic growth.

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1. Introduction

Thailand has achieved remarkable economic growth over the last three decades. This sustained economic growth has played a major role in reducing absolute poverty levels from nearly one third of the population in 1975 to presently less than 10\% (Warr, 2001). This performance ranks Thailand as one of the world’s most successful economies during this period. As it is widely accepted within mainstream literature that economic growth is a proxy indicator for welfare (Pigou, 1962; Hicks, 1940; Ravallion, 2001), this 30-
year period of high economic growth indicates that the welfare of all Thais has also significantly increased during this time.

However, if welfare is not simply a function of economic growth, but takes into account various other issues such as inequality, environmental degradation and sustainability, achieving economic growth may in fact diminish welfare (Daly and Cobb, 1990). An alternative index of welfare, the index of sustainable economic welfare (ISEW), reflects this new approach.

A number of ISEW studies have questioned the relationship between economic growth and welfare (Daly and Cobb, 1990; Diefenbacher, 1994; Hamilton, 1998; Jackson and Marks, 1994; Lawn and Sanders, 1997; Rosenberg and Oegema, 1995; Stockhammer et al., 1997). With only one exception (Castaneda, 1999), each of these studies has focussed on high-income countries. The constant finding across all of these ISEW studies is that at a certain point, additional economic growth reduces welfare.

Thailand is a worthwhile country to study because as a high growth economy, it is often presented as a model for other developing countries to imitate (Watkins, 1998). It is important to apply the ISEW to developing countries to investigate whether it is possible for such low-income countries to prematurely reach this point whereby achieving economic growth no longer increases economic welfare but reduces it.

This paper will estimate an ISEW for Thailand over a 25-year period, 1975–1999. This paper concludes that Thailand, a low-middle income country, is beginning to approach the point in which economic growth produces both diminishing and, at times, negative welfare returns as the costs of achieving economic growth begin to outweigh the associated benefits. This conclusion is important for policy makers and highlights the importance of implementing alternative welfare enhancing interventions in place of simply achieving economic growth.

The emphasis of this paper is not the methodology of the estimation of the ISEW for Thailand, as this can be found elsewhere (Clarke and Islam, 2004), but rather on the policy implications for developing countries of diminishing and negative welfare returns brought about through the achievement of economic growth.

This study is divided into five sections. This first section introduces the paper. The following section will set out the problem being considered. Section 3 will focus on the application of the ISEW to Thailand. Section 4 will present the results. Section 5 discusses the policy implications of these results. Conclusions are drawn in Section 6.

2. Research problem

Achieving economic growth has been the central theme of economic policy in most economies since the end of the Second World War (Nordhaus and Tobin, 1973; Manning, 2001). Governments in both developing and developed countries are continuously instigating policies designed to achieve economic growth (see NESDB, 1996, 2000). There is little doubt that the main purpose of increasing economic activity is to increase welfare (Samuelson et al., 1978; Kaosa-ard, 2000). Thus, the pursuit of economic growth appears to be intimately tied with pursuing increased welfare. The major question underlying the ISEW approach is whether an increase in economic growth ‘really reflects the true changes in welfare’ (Brekke, 1997, p. 158).

Sametz (1968) called for the costs and benefits of changes in environment, leisure time, new products, non-marketed goods, urbanisation, and government expenditure caused by achieving economic growth to be considered when measuring welfare. Nordhaus and Tobin (1973) empirically applied this approach to the United States and concluded that despite various adjustments to GDP per capita, economic growth still indicated improvements in welfare.

Daly and Cobb (1990) developed the ISEW approach to question Nordhaus and Tobin’s (1973) analysis and assumption that economic growth automatically increases welfare. However, whilst this new approach questioned the desirability of economic growth, it was considered extremely unlikely that economic growth would always be undesirable with respect to welfare. It was acknowledged that economic growth had a positive role to play in enhancing welfare, but whether this would always remain the case was of particular interest. The relationship between economic growth and welfare may include aspects of diminishing and negative
returns so that at a particular point in time, economic growth no longer adds to welfare but actually reduces it (Manning, 2001).

This point, in which economic growth ceases to add to welfare and begins to reduce it, has been labeled the Threshold Point (Max-Neef, 1991). The consideration of such a point is not new within the literature (Hicks, 1940; Pigou, 1962; Ng and Ng, 2001). For the past three decades, a number of authors have argued that this point has been crossed by developed countries (see Daly, 1971, 2000; Barkley and Seckler, 1972; Zolotas, 1981; Hamilton, 1998). Thus, whilst the developed world has reached an age of mass-consumption, welfare may have decreased despite continuous increases in economic growth. Social, political and environmental pressures such as pollution, urbanisation, poorer health, and so on, may have resulted in reduced levels of welfare (Daly, 2000).

Consideration within this paper is given to whether the ‘threshold point’ be reached only by a so-called wealthy society? (Max-Neef, 1995, p. 117), or whether it can also be reached by poorer countries at much lower levels of economic development. The answer may influence future development plans and policies. Expectations for improving society’s welfare through continuous economic growth would need to be re-examined, as would the economic and social policies for achieving this outcome.

3. Thailand and the ISEW

Castaneda (1999) summarised the findings of previous ISEW studies (Daly and Cobb, 1990; Diefenbacher, 1994; Hamilton, 1998; Jackson and Marks, 1994; Lawn and Sanders, 1997; Rosenberg and Oegema, 1995; Stockhammer et al., 1997). In general, these studies (of developed countries) found that welfare increased in line with economic growth (though at a slower rate) until the late 1970s or early 1980s, at which time the ISEW began to fall despite continuing increases in economic growth. The conclusion of these studies was that at a certain point, the costs of achieving economic growth begin to outweigh the associated benefits resulting in falling

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![Fig. 1. Representation of interconnected systems analysis.](image)
welfare. At this point, (the threshold point), further economic growth reduces welfare. The policy implications are significant as they challenge the underlying tenants of mainstream economics, that economic growth is both central and fundamental for improving welfare.

The value of Castaneda (1999) and this paper is that the focus is on developing countries (Chile and Thailand respectively). These countries are characterised by low-income levels, high underemployment, political instability and poor social capital. Economic growth is expected to remedy these ills. However, if countries with low national income levels can reach a threshold point and economic growth has diminishing and negative welfare returns, whole new approaches to development economics are required.

3.1. Systems analysis

Adjusting measures of national income to incorporate the unreported costs (and benefits) of achieving economic growth is based on an implicit premise that the economy is part of a larger interrelating system (Clarke, 2004). Assuming that society is

<table>
<thead>
<tr>
<th>Table 1</th>
<th>Summary of adjustments for Thai ISEW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item</td>
<td>Positive/negative</td>
</tr>
<tr>
<td>Income Inequality</td>
<td>Accounting for inequality</td>
</tr>
<tr>
<td>Adjusted Personal Consumption</td>
<td>Adjusted base for index</td>
</tr>
<tr>
<td>Public Expenditure on Education</td>
<td>Positive</td>
</tr>
<tr>
<td>Public Expenditure on Health</td>
<td>Positive</td>
</tr>
<tr>
<td>Commuting</td>
<td>Negative</td>
</tr>
<tr>
<td>Urbanisation</td>
<td>Negative</td>
</tr>
<tr>
<td>Private Expenditure on Health</td>
<td>Negative</td>
</tr>
<tr>
<td>Public Expenditure on Roads</td>
<td>Positive</td>
</tr>
<tr>
<td>Consumer Durables</td>
<td>Positive</td>
</tr>
<tr>
<td>Debt</td>
<td>Negative</td>
</tr>
<tr>
<td>Air Pollution</td>
<td>Negative</td>
</tr>
<tr>
<td>Water Pollution</td>
<td>Negative</td>
</tr>
<tr>
<td>Noise Pollution</td>
<td>Negative</td>
</tr>
<tr>
<td>Deforestation</td>
<td>Negative</td>
</tr>
<tr>
<td>Long Term Environmental Damage</td>
<td>Negative</td>
</tr>
<tr>
<td>Commercial Sex Work</td>
<td>Negative</td>
</tr>
</tbody>
</table>
systems-based underscores the need to consider the wider welfare implications of achieving economic growth. Within this application of the ISEW to Thailand, explicit systems analysis is undertaken. Society is made up of hierarchical and interconnected systems and sub-systems (Capra, 1982; Dopfer, 1979; Clayton and Radcliffe, 1996; Islam et al., 2003). Within this approach, the ecological system is considered the parent system and the social sub-systems are the economic, social, environment, political and spiritual (see Fig. 1). Each of these sub-systems has a direct impact on society’s well-being and therefore, measures of welfare must take into account each of these sub-systems in order for that measure to be accurate.

The following adjustments that explicitly recognize the impact of achieving economic growth on various sub-systems should be undertaken in estimating an ISEW for Thailand (other adjustments might be necessary for other countries) in order to measure changes in welfare.

Economic sub-system
- Personal consumption adjusted for income inequality

Social sub-system
- Public expenditure on education
- Public expenditure on health
- Private expenditure on health
- Urbanisation
- Commuting

Political sub-system
- Government streets and highways
- Consumer durables
- Corruption
- Debt

Environmental sub-system
- Air pollution
- Water pollution
- Noise pollution
- Loss of forests
- Non-renewable resources
- Long-term environmental damages

Spiritual sub-system
- Commercial sex work

As these sub-systems inter-relate, some adjustments may cross-over various components (i.e. commuting could be considered an adjustment for social, political, environmental and even spiritual sub-systems—sitting in a traffic jam provides a wonderful

| Table 2 |
| Summary of calculations—ISEW for Thailand |
| I = 1 - \sum_{i=1}^{n} (y'_i/\mu_i)^{1/\alpha} = \epsilon \neq 1 |
| Income Distribution (cost) |
| Public Education (benefit) |
| Public Health (benefit) |
| Commuting (cost) |
| Urbanisation (cost) |
| Private Health (cost) |
| Public Roads (benefit) |
| Consumer Durables (benefit) |
| Corruption (cost) |
| Public Debt (cost) |
| Air Pollution (cost) |
| Water Pollution (cost) |
| Noise Pollution (cost) |
| Deforestation (cost) |
| Long-term Environmental Damage (cost) |
| Commercial Sex Work (cost) |

where: \( I = \text{measure of income inequality; } y'_i = \text{income of individuals in the } i^{th} \text{ income range; } \mu_i = \text{mean income; } \alpha = \text{society's perspective on equality; } \text{Ed} = \text{benefits of public education; } \text{PE} = \text{expenditure on public education; } H = \text{benefits of public health care; } \text{PH} = \text{expenditure on public health care; } C = \text{cost of commuting; } \text{NRC} = \text{number of registered cars in Bangkok; } \text{XR} = \text{exchange rate; } U = \text{cost of urbanisation; } \text{BY} = \text{average income for Bangkok residents; } \text{H(p)} = \text{cost of private health care; } \text{PrHe} = \text{expenditure on private health care; } R = \text{benefits of public roads; } \text{Pr} = \text{expenditure on public roads; } \text{CD} = \text{benefits of consumer durables; } \text{Cd} = \text{expenditure on consumer durables; } \text{C(pol)} = \text{costs of political corruption; } \text{GDP} = \text{gross domestic product; } \text{D(p)} = \text{cost of public debt; } \text{IDP} = \text{interest paid on public debt; } \text{A} = \text{cost of air pollution; } \text{E} = \text{cost of } \text{CO}_2; \text{cCO} = \text{cost of carbon dioxide } (.03335 \text{ baht per kilogram); } \text{cCO} = \text{cost of carbon monoxide } (.03335 \text{ baht per kilogram); } \text{cNOS} = \text{cost of nitrogen monoxide } (2.84 \text{ baht per kilogram); } \text{cSOF} = \text{cost of sulfur monoxide } (7.4 \text{ baht per kilogram); } \text{cSPM} = \text{cost of suspended particulate matters } (4.15 \text{ baht per kilogram); } \text{W} = \text{cost of water pollution; } \text{IP} = \text{industrial pollution; } \text{F} = \text{food industry; } \text{BOD} = \text{biochemical oxygen demand; } \text{N} = \text{cost of noise pollution; } \text{GDP} = \text{gross domestic product; } \text{D} = \text{cost of deforestation; } \text{L} = \text{cost of long-term environmental damage; } \text{CSW} = \text{cost of commercial sex work industry; } \text{GNP} = \text{gross national income.} |
chance to contemplate the meaning of the universe and its conspiracy against you!). However, for simplicity (and to avoid double counting), it is of interest to categorise the adjustments within only one sub-system (Tables 1 and 2).

3.2. Adjustments unique to the Thai ISEW

The methodology for estimating the separate costs and benefits can be found elsewhere (Clarke and Islam, 2004). In general, the methodology has followed that set out previously (Daly and Cobb, 1990; Cobb and Cobb, 1994). However, a small number of adjustments within this ISEW have not been made in previous ISEW studies. The Thai-specific adjustments are corruption, debt and commercial sex work. The decision to include these adjustments within the Thai-ISEW is justified by accepting the principles of normative social choice theory (Bonner, 1986; Islam, 2001; Clarke and Islam, 2004).

Normative social choice refers to the processes of ordering alternative social states on the basis of the choices, preferences and value judgments of members of that society to determine what is the best state for that society. Normative social choice theory incorporates the various social concerns around welfare that are not adequately captured using individual preference satisfaction techniques within the market place. Normative social choices can be estimated using expert opinion (or analyst), government formulated public policy, or specific interviews of individuals on welfare outcomes. The methodology for each technique is well established (Islam, 2001). Using one, or a combination of the above, it is possible to determine the social choice perspectives on various welfare issues. While not unique to Thailand, corruption, debt and commercial sex work are all issues (identified by experts, government policy or social research) that reduce welfare in Thailand (Phongpaichit and Piriyarangsan, 1994; Phongpaichit et al., 1998; World Bank, 2000).

<table>
<thead>
<tr>
<th>Year</th>
<th>Economic (millions of baht)</th>
<th>Social (millions of baht)</th>
<th>Political (millions of baht)</th>
<th>Environmental (millions of baht)</th>
<th>Spiritual (millions of baht)</th>
<th>ISEW (millions of baht)</th>
<th>ISEW per capita</th>
<th>GDP per capita</th>
</tr>
</thead>
<tbody>
<tr>
<td>1975</td>
<td>289,271</td>
<td>-14,226</td>
<td>-3336</td>
<td>-81,737</td>
<td>-18,646</td>
<td>171,690</td>
<td>4050</td>
<td>14,662</td>
</tr>
<tr>
<td>1976</td>
<td>309,968</td>
<td>-14,380</td>
<td>-2771</td>
<td>-80,580</td>
<td>-20,371</td>
<td>191,866</td>
<td>4440</td>
<td>15,754</td>
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<tr>
<td>1977</td>
<td>333,312</td>
<td>-17,629</td>
<td>-5263</td>
<td>-137,464</td>
<td>-22,430</td>
<td>150,526</td>
<td>3400</td>
<td>16,942</td>
</tr>
<tr>
<td>1978</td>
<td>348,689</td>
<td>-17,828</td>
<td>-4460</td>
<td>-145,862</td>
<td>-24,558</td>
<td>155,981</td>
<td>3349</td>
<td>18,237</td>
</tr>
<tr>
<td>1979</td>
<td>368,041</td>
<td>-17,613</td>
<td>-5865</td>
<td>-70,782</td>
<td>-25,744</td>
<td>248,037</td>
<td>5379</td>
<td>18,819</td>
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<tr>
<td>1982</td>
<td>408,616</td>
<td>-17,597</td>
<td>-10,231</td>
<td>-83,773</td>
<td>-30,133</td>
<td>266,882</td>
<td>5464</td>
<td>20,883</td>
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<tr>
<td>1983</td>
<td>432,608</td>
<td>-17,658</td>
<td>-11,473</td>
<td>-83,698</td>
<td>-32,043</td>
<td>287,736</td>
<td>5811</td>
<td>21,729</td>
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<tr>
<td>1984</td>
<td>438,488</td>
<td>-21,985</td>
<td>-13,914</td>
<td>-87,772</td>
<td>-33,754</td>
<td>281,063</td>
<td>5556</td>
<td>22,504</td>
</tr>
<tr>
<td>1985</td>
<td>439,241</td>
<td>-25,719</td>
<td>-15,881</td>
<td>-90,177</td>
<td>-35,137</td>
<td>272,327</td>
<td>5258</td>
<td>22,996</td>
</tr>
<tr>
<td>1987</td>
<td>483,945</td>
<td>-35,342</td>
<td>-17,922</td>
<td>-78,871</td>
<td>-40,599</td>
<td>311,211</td>
<td>5777</td>
<td>25,561</td>
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<tr>
<td>1989</td>
<td>552,434</td>
<td>-48,866</td>
<td>-16,382</td>
<td>-91,478</td>
<td>-51,838</td>
<td>343,870</td>
<td>6153</td>
<td>31,316</td>
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<tr>
<td>1990</td>
<td>603,071</td>
<td>-54,663</td>
<td>-10,593</td>
<td>-113,112</td>
<td>-57,650</td>
<td>367,053</td>
<td>6519</td>
<td>34,565</td>
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<tr>
<td>1991</td>
<td>622,392</td>
<td>-60,523</td>
<td>-7050</td>
<td>-120,985</td>
<td>-62,420</td>
<td>371,414</td>
<td>6520</td>
<td>37,073</td>
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<tr>
<td>1992</td>
<td>655,585</td>
<td>-63,159</td>
<td>-2937</td>
<td>-126,737</td>
<td>-66,967</td>
<td>395,785</td>
<td>6849</td>
<td>39,506</td>
</tr>
<tr>
<td>1993</td>
<td>719,644</td>
<td>-57,618</td>
<td>781</td>
<td>-134,028</td>
<td>-72,808</td>
<td>455,971</td>
<td>7816</td>
<td>42,765</td>
</tr>
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<td>1997</td>
<td>932,210</td>
<td>-65,835</td>
<td>2765</td>
<td>-163,368</td>
<td>-89,590</td>
<td>616,182</td>
<td>10,132</td>
<td>49,691</td>
</tr>
<tr>
<td>1999</td>
<td>832,001</td>
<td>-70,019</td>
<td>-7335</td>
<td>-148,076</td>
<td>-82,165</td>
<td>524,406</td>
<td>8505</td>
<td>45,789</td>
</tr>
</tbody>
</table>
4. Results

Both the level and trend of welfare differs when measured by movements in ISEW per capita or gross domestic product (GDP) per capita indices. The ISEW per capita increases at a slower rate, but is also decreases at times when GDP per capita is actually increasing (i.e. at times of economic growth). The ISEW per capita rose and fell throughout the 1980s, effectively being unchanged in 1986 from the 1979 figure. In comparison, GDP per capita rose over 25% over this same period (Table 3).

The ISEW per capita rose steadily during the next decade though at significantly different rates than the GDP per capita. Within this period, the divergence between the two indices becomes quite apparent (Fig. 2).

Both indices peak in 1996. This is just prior to the financial crisis of 1997. After 1996 both indices begin to fall. Whilst GDP per capita has shown the propensity to increase in 1999, ISEW per capita has not increased but has fallen again. It is too early to confirm whether this is a trend or a fluctuation. However, by drawing on the results of other studies (Daly and Cobb, 1990; Jackson and Marks, 1994), a continuing of this divergence could be expected.

It is important to note that even though both the ISEW per capita and GDP per capita welfare indices are money-metric, they should be considered ordinal rather than cardinal. It is therefore incorrect to say that if ISEW per capita (or GDP per capita) increases 10%, welfare also increases 10%. Further, it is also not accurate, when comparing the levels of GDP per capita and ISEW per capita to infer that the money-metric difference between these two indices (i.e. in 1988 GDP per capita is 28380 baht while ISEW per capita is 6000 baht, a difference of 22380 baht) is the difference in welfare. What can be inferred from these two time series though is the variation and divergence in the two trend lines. The analysis of the welfare experienced by the Thai population between 1975 and 1999 is, in this instance, dependent on the shape of these two trend lines.

The trend line for GDP per capita has three main phases; the initial steady rise to 1986, the accelerated growth to 1997 and the final dip and apparent recovery to 1999. However the pattern for ISEW per capita is significantly different. The rise is slower, there is not an accelerated period, nor is there an indication of a recovery in the final year after the index begins falling in 1997. Comparing the two indices further, an increasing divergence is also apparent. This indicates that the relationship between

![Fig. 2. Comparison of ISEW per capita and GDP per capita measures of welfare for Thailand, 1975–1999 (1988 prices).](image-url)
GDP per capita and ISEW per capita is becoming increasingly weaker throughout the time series, casting doubts over the long-term desirability of economic growth in Thailand in terms of welfare.

This is also illustrated by comparing the two measures as indices with a base year of 1975. The GDP per capita index maintains its three phases of growth (constant, accelerated and crisis), whilst the ISEW per capita index rises and falls through to the earlier 1990s, then has a steady period of growth before falling again following the financial crisis in 1997 (Fig. 3).

The most significant adjustment in this ISEW was the cost of inequality to welfare. This was eight times more important than the estimated costs of commercial sex work. The largest positive adjustment within the ISEW was education.

Studies suggesting that achieving economic growth may decrease a nation’s aggregate welfare are limited within mainstream literature. When discussed, such economic growth has been termed impoverishing, or welfare-reducing (see Ng and Ng, 2001). However, these descriptions are limited as they do not adequately describe Thailand’s experience in which welfare levels improve by increasingly diminishing rates due to the increasing costs of achieving economic growth compared to the associated benefits. The concept introduced is stunting economic growth. This phenomena is so-called because this economic growth has “retarded the progress” of welfare. During periods of stunting economic growth, welfare improves at decreasing rates, remains stagnant, and at times (while continuing to trend upwards) falls. Stunting economic growth is undesirable as its effects are sub-optimal. Optimal economic growth results in welfare increasing at the maximum rate. However, when the associated costs and benefits of achieving economic growth are considered, it can be seen that welfare does not always increase at the maximum rate. Thus, at these times, economic growth is sub-optimal or stunting in terms of welfare. This conclusion is in line with other work, such as Thailand’s performance in the Human Development Index (UNDP, 2002). However, further ISEW studies for other developing countries is required before conclusions can be drawn on the generality of the Thai economic growth experience and how this might compare to the economic growth experience of other poor countries.

![Fig. 3. Comparison of ISEW per capita and GDP per capita for Thailand, 1975=100.](image-url)
5. Policy implications

It is reasonable to base policy initiatives on welfare indices (Hagerty et al., 2001). Before doing so however, it is prescient to discuss the current debate on the merit of the ISEW approach for this purpose. Neumayer (1999, in press) argues that due to a number of weaknesses, the ISEW is a faulty measure of welfare. His reservations include the question of weighting, bias in composition, theoretical weaknesses in methodology and the merging of sustainability and welfare into one measure. Lawn (2003) has defended the ISEW in terms of both its theoretical underpinnings and its composition. Lawn (in press) has also further called for a standardized ISEW to be developed with a common set of methodologies in order to dampen this specific criticism. As Daly and Cobb (1990) set out, the initial purpose of the ISEW approach was to widen the scope of debate around welfare in order to move beyond an all-encompassing focus on achieving economic growth (also see the justifications for the Human Development Index; UNDP, 1990). In this regard, Nuemayer’s criticisms should be considered important but not sufficient reason to cease analysis.

Perhaps in part due to this ongoing debate, policy implications based on the analysis of ISEW are rare within the literature, especially for developing countries. Therefore, having reviewed the results of the ISEW, it is important to discuss policy perspectives that logically follow from this welfare economic analysis. These are not policy prescriptions but rather are issues that should be considered by those determining policies.

5.1. Reduce emphasis on economic growth

Economic growth is not always desirable with regards to increasing welfare as its net benefits are sometimes negative and rarely as positive as unadjusted aggregated standard national accounts growth rates would suggest. Therefore, the first policy suggestion is to reduce the emphasis on resource consumption based economic growth. For example, see the welfare costs within the Thai ISEW of deforestation caused through achieving economic growth.

A balanced approach to achieving economic growth is required. Economic growth should not be the only priority within government policies. Economic growth aimed at specific sectoral areas (Warr, 2001) and for specific purposes would be better ‘rather than pursuing economic growth for its own sake and hoping that the benefits will be spread widely enough that the poor derive some gains’ (Fields, 1995, p. 76).

5.2. Emphasise pro-poor policies

Pro-poor policies are required to ensure that the poor receive the benefits of any future economic growth or any residual benefits from previous growth. If economic growth is pursued, one of its specific purposes must be to reduce poverty. Within Thailand, the Northeast region has traditionally been the poorest region, having poverty rates similar to parts of sub-Saharan Africa (Watkins, 1998). Whilst economic growth has been extremely high, the majority of the population who remain rural have been largely unaffected by its direct benefits but have experienced its associated costs (Dixon, 1999; Warr, 2001). Whilst controversial, a pro-poor policy that should be considered is income redistribution. (Inequality is the largest cost to welfare associated with economic growth within the Thai ISEW). Whilst there are attendant costs with re-distribution (Pigou, 1962), it is more likely to reduce income inequality than simple economic growth. Such redistribution though is not undertaken to increase prospects for future growth (Chenery et al., 1974), but rather for the expressed purposes of reducing poverty and hence lifting welfare. The reduction of inequality reduces the poverty elasticity so future growth has a greater impact on reducing poverty levels (World Bank, 2000; Deolali- kar, 2002). The reduction of inequality also encourages social inclusion (Killock, 2002; Maxwell, 2001, 2003; McKay, 2002; White, 2000). Whilst poverty levels have decreased (Kakwani and Krongkaew, 2000), a large absolute number of Thais are still struggling to survive despite three decades of remarkable growth.

5.3. Emphasise other sub-systems

By defining and measuring welfare using systems analysis, the importance of non-economic sub-systems
has become apparent. Public policies can emphasise the impact other domains have to increase welfare.

There are three main environmental policy areas that would positively impact welfare levels: (1) natural resource protection; (2) pollution control and abatement programs; and (3) limits on harvesting renewable resources. Whilst such government policies might exist, they may not be adequately enforced. Re-emphasising these policy areas is therefore important.

The costs within the Thai ISEW of pollution and environmental degradation caused through achieving economic growth are quite significant.

Thailand has suffered a significant decline in its natural forest cover (Bello, 1995). The impact of this is wide-ranging. It has immediate impact on local inhabitants who rely on the forest for subsistence farming, but it has also had impacts on Thailand’s biodiversity and the ability of the ecology to withstand other stresses. Policies may cover limits on deforestation and the implementation of re-forestation programs.

Thailand also has pollution emission and control policies in place but these are not vigorously enforced (Poungsomlee and Ross, 1992). Pollution control and abatement programs are required for water, air, noise, and industrial pollution.

Stricter controls over the harvesting of renewable resources is required to ensure that such resources are not destroyed or forced below sustainable levels (Duraiappah et al., 1999). Such resources may include marine or land animals and vegetation. Ensuring sustainability of these resources is a large part of ensuring sustainability of welfare.

Increased attention on the provision of government services and the actual mechanisms of government is also required. Policies ensuring the protection of political and civil freedoms and reduction of corruption and responsible management of debt can all improve welfare. Both debt and corruption negatively impact welfare within the Thai ISEW.

Even during periods of democratic freedom, the welfare of Thailand has been negatively affected by political corruption at all levels of society (Phongpai-chit and Piriyarangsan, 1994; Linter, 1998). Corruption leads to inefficient allocation of resources (Parnwell, 1996). This is perhaps the most difficult policy change as its implementation must be prepared and enforced by those with the most to lose. External organisations, such as Transparency International, may be required to assist in monitoring the effectiveness of anti-corruption.

Whilst Thailand’s public debt does not compare to the debt burdens of other developing countries, it is still a matter of concern. In the past, public debt was acquired for unproductive use such as fuel subsidies (Dixon, 1999). Whilst short-term benefits may be received in the form of cheaper or increased consumption, the longer-term costs are greater. Servicing debt results in fewer funds available for essential services that can positively affect welfare such as health and education spending. Various policies capping debt or limiting it to productive uses only could be considered.

Welfare can be enhanced with appropriate policies focussing on issues of commuting and urbanisation. Commuting has been recognised as a significant cost of economic growth in Bangkok (Poungsomlee and Ross, 1992). Within Thailand, this cost is extremely high as Bangkok is one of the most primate cities in the world (Dixon, 1999). Thai authorities have long struggled with how to ease congestion in Bangkok but with an additional 800 cars a day being registered in Bangkok (Bello, 1995), solutions appear impossible. Whilst the construction of new road lanes and the Skytrain, have reduced some travel times, this area must remain a priority for policy makers as it does impact on welfare levels (Ross and Thadaniti, 1995).

The benefits of urbanisation have recently been highlighted (Venables, 2003; Fujita et al., 1999), however in extreme levels of urban density, such as Bangkok, the social costs may be greater than the economic benefits. Ten percent of the Thai population lives in Bangkok making it one of the most primate cities in the world. Policy measures might involve decentralisation incentives for government departments, business and industry, disincentives for locating new or expanding existing industries within urban centres, increasing services and rewards for those living in rural areas, or actively encouraging relocation to rural areas.

Finally, a healthy spiritual sub-system results in the protection of the most vulnerable within society from being de-humanised (see welfare costs within the Thai ISEW of commercial sex work). This may involve the protection from exploitation of women, and children from commercial sex work or from utter object poverty.
6. Conclusion

The paper empirically applied a ISEW to Thailand over a 25-year period, 1975–1999. The results show that Thailand has begun to experience diminishing and negative welfare returns from economic growth (termed stunting economic growth). These results are not unique but have only been previously found for developed countries (bar one exception). As Thailand has begun to experience these diminishing returns at such a low-income level should be of great concern to policy makers who primarily rely on achieving economic growth to improve welfare levels. Further work is required in a number of developing countries to determine whether the experiences of Thailand are special or common and following Lawn (2003) further work is required to standardize ISEW composition and methodology to make it more accepted by policy makers. If diminishing and negative welfare returns from economic growth can be reached prematurely then alternative theories of development are urgently required.

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