UNITED STATES
INTERNATIONAL TAXATION
UNITED STATES INTERNATIONAL TAXATION

Third Edition

Philip F. Postlewaite
Professor of Law
Director, Graduate Tax Program
Northwestern University School of Law

Jeffrey T. Sheffield
Senior Lecturer, Graduate Tax Program
Northwestern University School of Law
Partner, Kirkland & Ellis LLP

Julie Green Baumeister
International Tax Services
Ernst & Young LLP

Genevieve A. Tokić
Associate, United States and International Tax
McDermott Will & Emery
Dedications

It seems like yesterday
But it was long ago . . .
Wish I didn’t know now what I didn’t know then
Against the wind
We were running against the wind
We were young and strong, we were running
Against the wind
And the years rolled slowly past . . .
I began to find myself searching
Searching for shelter again and again
Against the wind
A little something against the wind
I found myself seeking shelter against the wind . . .
Well, those drifter’s days are past me now
I’ve got so much more to think about
Deadlines and commitments
What to leave in, what to leave out
Against the wind
I’m still running against the wind
I’m older now but still running
Against the wind

Against the Wind
Bob Seeger

To my Family:
Ruth, Jen, Jess, Eric, Matthew,
Madison, Reid, and Payton

You sometimes created the wind,
but more frequently tried to shelter me from it,
oftentimes without success.
I love you!

PFP
To my wife Hope
With deepest love and affection

JTS
To my Dad, who taught me by example
that hard work will eventually be rewarded,
that it’s never too late to chase dreams,
and that nothing is more important than family.

JGB
To S.T., with all my love, and gratitude for your unwavering support.

And to L.E.T., light of my life.

GAT
Preface

This book contains teaching materials for law school courses on the United States federal income taxation of persons engaged in international transactions. It contains 15 separate Units that address fundamental concepts of residency and source, the taxation of United States persons (citizens, residents, and domestic corporations) on their activities abroad, the taxation of foreign persons (non-resident alien individuals and foreign corporations) on their activities within the United States, and the safeguard rules in place to curtail potentially abusive tax deferral in the international context.

The Units in this casebook are arranged so that instructors may assign only those that are consistent with particular course objectives and Units may be presented in an alternative order, as appropriate. Each Unit is organized in four parts:

A. Assigned Code and Regulation Provisions
B. Problems for Class Discussion
C. Overview
D. Reference Materials

Students should begin their class preparation by reading the Code and Regulation provisions set forth in Part A of the assigned Unit and working through the Problems in Part B. The overview in Part C and the reference materials in Part D (cases, rulings, and other relevant authorities) provide the context in which the Code and Regulation provisions come into play, how they relate to the assigned Problems, and offers a starting point from which students may conduct further research. Using this added context, students may then review and refine their initial answers to the Problems.

This book is a third successor edition to Philip F. Postlewaite, International Taxation: Cases, Materials, and Problems (Anderson Publishing 1999). This edition has been revised to provide a more streamlined approach to the material and to focus on key concepts that can and should reasonably be covered in a one-semester introductory course.
# Table of Contents

**Part I  FOUNDATIONS OF INTERNATIONAL TAXATION  . . . .  1**

**Unit 1  RESIDENCY CLASSIFICATION RULES  . . . . .  3**

A.  CODE AND REGULATION PROVISIONS  . . . . . . . . . . . .  3
B.  PROBLEMS FOR CLASS DISCUSSION  . . . . . . . . . . . .  3
C.  OVERVIEW  . . . . . . . . . . . . . . . . . . . . . . . . . . . . .  5
   1.01  Residency Classification for Individuals  . . . . . . . . . . . .  8
   1.02  The Green Card Test  . . . . . . . . . . . . . . . . . . . . . . . . . . .  8
   1.03  The Substantial Presence Test  . . . . . . . . . . . . . . . . . . . . .  9
   1.04  The 30-Day De Minimis Rule  . . . . . . . . . . . . . . . . . . . . .  9
   1.05  The Tax-Home Exception  . . . . . . . . . . . . . . . . . . . . . . . . .  9
   1.06  Exempt and Other Special Categories of Alien Individuals  . . . . .  10
   1.07  Residency Commencement and Termination  . . . . . . . . . . . .  11
   1.08  First-Year Residency Election  . . . . . . . . . . . . . . . . . . . . .  12
   1.09  Spousal Residency Election  . . . . . . . . . . . . . . . . . . . . . . .  13
   1.10  General United States Taxation of Corporations  . . . . . . . . . .  14
   1.11  Classification of Certain Business Entities  . . . . . . . . . . . .  14
D.  REFERENCE MATERIALS  . . . . . . . . . . . . . . . . . . . . . .  16
   *Cook v. Tait*  . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .  16

**Unit 2  SOURCE RULES  . . . . . . . . . . . . . . . . . . . . .  19**

A.  CODE AND REGULATION PROVISIONS  . . . . . . . . . . . .  19
B.  PROBLEMS FOR CLASS DISCUSSION  . . . . . . . . . . . .  19
C.  OVERVIEW  . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .  21
   2.01  Interest Income  . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .  23
   2.02  Exceptions to the Interest Source Rule  . . . . . . . . . . . . . . . . .  23
   2.03  Dividends  . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .  24
   2.04  Exceptions to the Dividend Source Rule  . . . . . . . . . . . . . . . . .  25
   2.05  Personal Services Compensation  . . . . . . . . . . . . . . . . . . . . . .  25
   2.06  Rents and Royalties  . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .  26
   2.07  United States Real Property Interests  . . . . . . . . . . . . . . . . . .  27
   2.08  Sales of Personal Property Generally  . . . . . . . . . . . . . . . . . . .  27
   2.09  Sales of Inventory Property  . . . . . . . . . . . . . . . . . . . . . . . . . . .  27
   2.10  Sales of Non-Inventory Property  . . . . . . . . . . . . . . . . . . . . . .  29
   2.11  Depreciable Property  . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .  30
   2.12  Intangible Property  . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .  31
   2.13  Scholarships and Prizes  . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .  32
   2.14  Mixed-Source Income  . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .  32
# Table of Contents

**Part II**  
INTRODUCTION TO THE TREATMENT OF OUTBOUND ACTIVITIES  

**Unit 3**  
FOREIGN EARNED INCOME OF UNITED STATES PERSONS  

<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>D.</td>
<td>REFERENCE MATERIALS</td>
<td>34</td>
</tr>
<tr>
<td></td>
<td>Boulez v. Commissioner</td>
<td>35</td>
</tr>
<tr>
<td></td>
<td>Revenue Ruling 2004-75</td>
<td>38</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>A.</td>
<td>CODE AND REGULATION PROVISIONS</td>
<td>43</td>
</tr>
<tr>
<td>B.</td>
<td>PROBLEMS FOR CLASS DISCUSSION</td>
<td>43</td>
</tr>
<tr>
<td>C.</td>
<td>OVERVIEW</td>
<td>44</td>
</tr>
<tr>
<td>3.01</td>
<td>The Elective § 911 Exclusion</td>
<td>45</td>
</tr>
<tr>
<td>3.02</td>
<td>Requirements for Eligibility: Foreign Tax Home</td>
<td>46</td>
</tr>
<tr>
<td>3.03</td>
<td>Bona Fide Residence Test</td>
<td>47</td>
</tr>
<tr>
<td>3.04</td>
<td>Physical Presence Test</td>
<td>49</td>
</tr>
<tr>
<td>3.05</td>
<td>Excludable Income Amounts</td>
<td>50</td>
</tr>
<tr>
<td>3.06</td>
<td>“Housing Cost Amount”</td>
<td>50</td>
</tr>
<tr>
<td>3.07</td>
<td>Self-Provided Housing</td>
<td>51</td>
</tr>
<tr>
<td>3.08</td>
<td>“Foreign Earned Income”</td>
<td>51</td>
</tr>
<tr>
<td>3.09</td>
<td>Deferred Payments</td>
<td>51</td>
</tr>
<tr>
<td>3.10</td>
<td>Sole Proprietorship or Partnership</td>
<td>52</td>
</tr>
<tr>
<td>3.11</td>
<td>Computation of Tax Liability Where Exclusion Applies</td>
<td>52</td>
</tr>
<tr>
<td>D.</td>
<td>REFERENCE MATERIALS</td>
<td>53</td>
</tr>
<tr>
<td></td>
<td>Notice 2006-87</td>
<td>53</td>
</tr>
<tr>
<td></td>
<td>Jones v. Commissioner</td>
<td>54</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>A.</td>
<td>CODE AND REGULATION PROVISIONS</td>
<td>61</td>
</tr>
<tr>
<td>B.</td>
<td>PROBLEMS FOR CLASS DISCUSSION</td>
<td>61</td>
</tr>
<tr>
<td>C.</td>
<td>OVERVIEW</td>
<td>61</td>
</tr>
<tr>
<td>4.01</td>
<td>Credit versus Deduction</td>
<td>63</td>
</tr>
<tr>
<td>4.02</td>
<td>Creditable Taxes — General Principles</td>
<td>64</td>
</tr>
<tr>
<td>4.03</td>
<td>Payor of a Tax</td>
<td>64</td>
</tr>
<tr>
<td>4.04</td>
<td>Amount of Tax Paid</td>
<td>66</td>
</tr>
<tr>
<td>4.05</td>
<td>Subsidies</td>
<td>66</td>
</tr>
<tr>
<td>4.06</td>
<td>Multiple Levies</td>
<td>66</td>
</tr>
<tr>
<td>4.07</td>
<td>Refunds and Benefits</td>
<td>67</td>
</tr>
<tr>
<td>4.08</td>
<td>Compulsory Payments</td>
<td>67</td>
</tr>
</tbody>
</table>
# Table of Contents

4.09 Economic Benefits ........................................ 67
4.10 Predominant Character of an Income Tax .................. 68
4.11 Taxes on Business Income .................................. 68
4.12 Taxes on Dividends, Interest, and Other Passive Income .... 70
4.13 Taxes on Compensation .................................... 70
4.14 Taxes “In Lieu Of” Income Taxes: § 903 ...................... 71
4.15 Section 904 Limitation upon the Amount of Taxes Which May Be Credited ........................................ 72
4.16 Denial of Credit for Taxes Paid to Certain Countries ........ 72

D. REFERENCE MATERIALS ........................................ 73

- Wada v. Commissioner .......................................... 73
- PPL Corporation v. Commissioner ............................... 75
- Preamble to Proposed Regulation § 1.901-2(f) ................. 79

Unit 5 FOREIGN TAX CREDIT: THE “DEEMED PAID” CREDIT ........................................ 83

A. CODE AND REGULATION PROVISIONS ....................... 83
B. PROBLEMS FOR CLASS DISCUSSION ....................... 83
C. OVERVIEW .................................................... 84

5.01 Section 902: Basic Structure ................................ 85
5.02 Calculating the Taxes Deemed Paid by Domestic Corporations ........................................ 87
5.03 Undistributed Earnings and Accumulated Profits ............ 88
5.04 The § 78 Gross-Up ........................................... 89

D. REFERENCE MATERIALS ........................................ 89

- First Chicago Corp. v. Commissioner ............................. 90
- Revenue Ruling 92-86 ........................................... 93

Unit 6 FOREIGN TAX CREDIT: THE § 904 LIMITATIONS .... 97

A. CODE AND REGULATION PROVISIONS ....................... 97
B. PROBLEMS FOR CLASS DISCUSSION ....................... 97
C. OVERVIEW .................................................... 98

6.01 Section 904(a): The Overall Limitation ..................... 99
6.02 The Basket System .......................................... 100
6.03 Passive Category Income .................................... 103
6.04 General Category Income .................................... 104
6.05 Special Rules for Capital Gains ............................... 104
6.06 Special Rule for Capital Losses .............................. 105
6.07 Recapture of Foreign Losses: § 904(f) ...................... 105
6.08 Carryback and Carryover of Excess Taxes Paid: § 904(c) .... 107

D. REFERENCE MATERIALS ........................................ 108
# Table of Contents


## Part III INBOUND TAXATION ............................. 111

### Unit 7 TREATMENT OF FOREIGN-OWNED UNITED STATES INVESTMENT INCOME ................. 113

A. CODE AND REGULATION PROVISIONS ................. 113
B. PROBLEMS FOR CLASS DISCUSSION ................. 113
C. OVERVIEW ........................................ 114
   7.01 Income Items Included in §§ 871(a) and 881(a) .......... 116
   7.02 Income from Intangible Property ................. 116
   7.03 Exception for Most Interest Payments ............. 116
   7.04 Exception for Certain Dividends ................. 117
   7.05 Capital Gains .................................... 118
   7.06 Income from Real Property ................. 118
   7.07 Withholding of 30 Percent Tax at Source ............ 119
D. REFERENCE MATERIALS ................................ 120
   Revenue Ruling 89-91 ............................... 120

### Unit 8 TREATMENT OF FOREIGN-OWNED UNITED STATES BUSINESS INCOME ................. 123

A. CODE AND REGULATION PROVISIONS ................. 123
B. PROBLEMS FOR CLASS DISCUSSION ................. 123
C. OVERVIEW ........................................ 125
   8.01 Engaged in a Trade or Business in the United States .... 126
   8.02 Attribution through Agents ................. 127
   8.03 Performance of Services as a Trade or Business .... 127
   8.04 Real Property Activity as a Trade or Business .... 128
   8.05 Sales Activity as a Trade or Business ................. 129
   8.06 Purchasing Activity as a Trade or Business .... 129
   8.07 The Force of Attraction Doctrine ............. 129
   8.08 Effectively Connected Income ................. 130
   8.09 Step One: Identification of Gross Effectively Connected Income .... 130
   8.10 FDAP Income as ECI ............................... 130
   8.11 All Other United States Source Income as ECI .... 131
   8.12 Effectively Connected Foreign Source Income .... 131
   8.13 Step Two: Segregating Expenses ............. 132
   8.14 Step Three: Allocation ................. 133
   8.15 Step Four: Apportionment ................. 134
D. REFERENCE MATERIALS ................................ 135
Table of Contents

Unit 9 TAXATION OF BRANCH PROFITS AND INVESTMENT IN UNITED STATES REAL PROPERTY 149

A. CODE AND REGULATION PROVISIONS 149

B. PROBLEMS FOR CLASS DISCUSSION 149

C. OVERVIEW 150

9.01 Branch Profits Taxes — In General 151
9.02 Branch Profits Tax on the Dividend Equivalent Amount 152
9.03 Effectively Connected Earnings and Profits 153
9.04 The Branch Interest Tax 153
9.05 The Branch Excess Interest Tax 154
9.06 Background on the Taxation of United States Real Property Interests 154
9.07 Section 897: The Big Picture 155
9.08 Direct Investment in United States Real Property 156
9.09 United States Real Property Interests 156
9.10 Tangible Property 156
9.11 Intangible Property 157
9.12 Dispositions 158
9.13 Indirect Investment — Interests Held Through Domestic Corporations 159
9.14 United States Real Property Holding Corporations 159
9.15 Indirect Investment — Interests Held Through Foreign Corporations 160
9.16 Distributions by Foreign Corporations 160

D. REFERENCE MATERIALS 161

Revenue Ruling 2008-31 161
Revenue Ruling 84-160 162

Unit 10 OVERVIEW OF TAX TREATIES 165

A. CODE AND REGULATION PROVISIONS 165

B. PROBLEMS FOR CLASS DISCUSSION 165

C. OVERVIEW 166

10.01 The Treaty Process 168
10.02 Interpretative Resources 168

taxation of branch profits and investment in united states real property
Table of Contents

10.03 Relationship of Tax Treaties to United States Federal Law ............ 169
10.04 Double Taxation ............................................................................. 170
10.05 Saving Clause ................................................................................ 170
10.06 Treaty Benefit Eligibility .................................................................. 171
10.07 Anti-Treaty Shopping Measures ...................................................... 171
10.08 Non-Discrimination ......................................................................... 172
10.09 Competent Authority Procedures .................................................... 172
D. REFERENCE MATERIALS ............................................................... 173
       Revenue Ruling 91-58 ................................................................. 173

Unit 11 TAX TREATIES AND INVESTMENT INCOME ......................... 175
A. CODE AND REGULATION PROVISIONS ........................................ 175
B. PROBLEMS FOR CLASS DISCUSSION ........................................... 175
C. OVERVIEW .......................................................................................... 176
   11.01 A Note on Interpretation .............................................................. 178
   11.02 Dividends — Treaty Article 10 .................................................... 178
   11.03 Interest — Treaty Article 11 ........................................................ 179
   11.04 Royalties — Treaty Article 12 ...................................................... 180
   11.05 Gains from the Disposition of Property — Treaty Article 13 ........ 180
   11.06 Income from Real Property — Treaty Articles 6 and 13 ............. 181
   11.07 Residual Income — Treaty Article 21 .......................................... 181
D. REFERENCE MATERIALS ............................................................... 181
       Revenue Ruling 75-118 ................................................................. 181

Unit 12 TAX TREATIES AND BUSINESS INCOME ............................ 183
A. CODE AND REGULATION PROVISIONS ........................................ 183
B. PROBLEMS FOR CLASS DISCUSSION ........................................... 183
C. OVERVIEW .......................................................................................... 185
   12.01 United States Trade or Business .................................................. 186
   12.02 Permanent Establishment — Treaty Article 5 ............................. 187
   12.03 Duration ...................................................................................... 189
   12.04 Use of Another’s Fixed Place of Business ..................................... 189
   12.05 Use of Agents ............................................................................... 189
   12.06 Dependent Agents ...................................................................... 190
   12.07 Income from Employment — Treaty Article 14 ......................... 191
   12.08 Independent Personal Services (Independent Contractors) .......... 192
   12.09 Consequences of Having a Permanent Establishment .................. 193
   12.10 Business Profits — Treaty Article 7 .............................................. 194
   12.11 The “Attributable to” Concept ...................................................... 194
   12.12 Gross Income Attributable to a Permanent Establishment ........... 195
   12.13 Waiver of Business Profits Article Protection .............................. 196
### Table of Contents

#### Part IV  SAFEGUARDS  .................................................. 211

#### Unit 13  INTRODUCTION TO CONTROLLED FOREIGN CORPORATIONS  213

A.  CODE AND REGULATION PROVISIONS  .................................. 213
B.  PROBLEMS FOR CLASS DISCUSSION  .................................. 213
C.  OVERVIEW  ................................................................. 214
   13.01  CFC Defined  .................................................. 215
   13.02  United States Shareholder Defined  ............................ 215
   13.03  Direct Ownership  .............................................. 215
   13.04  Indirect and Constructive Ownership  ......................... 216
   13.05  Limitations of the Subpart F Regime  ......................... 216
D.  REFERENCE MATERIALS  .................................................. 217
   *Unger v. Commissioner*  .............................................. 200

#### Unit 14  CONTROLLED FOREIGN CORPORATIONS — SUBPART F INCOME  223

A.  CODE PROVISIONS  ..................................................... 223
B.  PROBLEMS FOR CLASS DISCUSSION  .................................. 223
C.  OVERVIEW  ................................................................. 224
   14.01  Subpart F Income  .............................................. 225
   14.02  Foreign Personal Holding Company Income  .................. 226
   14.03  Foreign Base Company Sales Income  .......................... 228
   14.04  Foreign Base Company Services Income  ...................... 230
   14.05  Allocation of Deductions to Base Company Income: Rules and Limitations  232
   14.06  Special Rules Applicable to Foreign Base Company Income  232
   14.07  Pro Rata Share  .................................................. 233
   14.08  Basis Adjustments  .............................................. 233
   14.09  Exclusions from Gross Income — Previously Taxed Earnings and Profits  234
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.10 Sale of CFC Stock</td>
<td>234</td>
</tr>
<tr>
<td>D. REFERENCE MATERIALS</td>
<td>235</td>
</tr>
<tr>
<td>Notice 2007-13</td>
<td>236</td>
</tr>
<tr>
<td><strong>Unit 15</strong> PASSIVE FOREIGN INVESTMENT COMPANIES</td>
<td>241</td>
</tr>
<tr>
<td>A. CODE AND REGULATION PROVISIONS</td>
<td>241</td>
</tr>
<tr>
<td>B. PROBLEMS FOR CLASS DISCUSSION</td>
<td>241</td>
</tr>
<tr>
<td>C. OVERVIEW</td>
<td>242</td>
</tr>
<tr>
<td>15.01 The § 1291 Tax and Interest Regime</td>
<td>243</td>
</tr>
<tr>
<td>15.02 The § 1295 QEF Election</td>
<td>244</td>
</tr>
<tr>
<td>15.03 The § 1296 Mark-to-Market Regime</td>
<td>244</td>
</tr>
<tr>
<td>15.04 Classification of a PFIC: The Passive Income and Passive Assets Tests</td>
<td>245</td>
</tr>
<tr>
<td>15.05 Passive Income Test</td>
<td>245</td>
</tr>
<tr>
<td>15.06 Passive Assets Test</td>
<td>245</td>
</tr>
<tr>
<td>15.07 Special Look-Through Rule</td>
<td>246</td>
</tr>
<tr>
<td>15.08 Exceptions to Passive Foreign Investment Company Status</td>
<td>246</td>
</tr>
<tr>
<td>15.09 The § 1291 Tax and Interest Regime — Excess Distributions and Dispositions</td>
<td>247</td>
</tr>
<tr>
<td>15.10 Mechanics of § 1291</td>
<td>247</td>
</tr>
<tr>
<td>15.11 The Deferred Tax Amount</td>
<td>248</td>
</tr>
<tr>
<td>15.12 QEF Election</td>
<td>249</td>
</tr>
<tr>
<td>15.13 Removing the § 1291 Taint</td>
<td>249</td>
</tr>
<tr>
<td>15.14 The Deemed Sale Election</td>
<td>249</td>
</tr>
<tr>
<td>15.15 The Deemed Dividend Election</td>
<td>250</td>
</tr>
<tr>
<td>15.16 Requirements for Making the QEF Election</td>
<td>250</td>
</tr>
<tr>
<td>15.17 Current § 1293 Taxation of United States Shareholders Electing QEF Status</td>
<td>250</td>
</tr>
<tr>
<td>15.18 Safeguards Against Double Taxation of PFIC Earnings</td>
<td>251</td>
</tr>
<tr>
<td>D. REFERENCE MATERIALS</td>
<td>251</td>
</tr>
<tr>
<td>Notice 88-22</td>
<td>251</td>
</tr>
<tr>
<td>Private Letter Ruling 200813036</td>
<td>254</td>
</tr>
<tr>
<td><strong>Appendix</strong></td>
<td>259</td>
</tr>
<tr>
<td>United States Model Income Tax Convention (November 15, 2006)</td>
<td>259</td>
</tr>
<tr>
<td>United States Model Technical Explanation Accompanying the United States Model Income Tax Convention of November 15, 2006</td>
<td>284</td>
</tr>
<tr>
<td>Income Tax Convention Between Canada and the United States Signed September 26, 1980; In Force as of August 16, 1984 as Amended by Subsequent Protocols through 2007</td>
<td>376</td>
</tr>
</tbody>
</table>
Table of Contents

Treasury Department Technical Explanation of the [1980] Convention Between the United States of America and Canada with Respect to Taxes on Income and Capital (April 26, 1984) .......................................... 422
Treasury Department Technical Explanation of the [1995] Protocol Amending the Convention Between the United States of America and Canada with Respect to Taxes on Income and Capital (June 13, 1995) ................. 482

Table of Cases .................................................... TC-1

Table of Statutes .................................................. TS-1

Table of Secondary Authorities ................................. TSA-1

Index ................................................................. I-1